

Pre-Show Report

129th ANNUAL MEETING & EXHIBITION

TMS

2000

MARCH 12-16, 2000



OPRYLAND HOTEL



NASHVILLE, TENNESSEE
U.S.A.



TMS

Minerals • Metals • Materials



Previewing products and services for over 150 companies taking part in the upcoming TMS Exhibition

Includes:

- Equipment and Services Index
- Alphabetical Listing of Exhibitors
- Exhibition Floorplan

View complete meeting details along with current updates to this document in TMS OnLine at <http://www.tms.org/Meetings/Annual-00/AnnMtg00home.html>

2000 TMS ANNUAL MEETING EXHIBITION PRODUCT/SERVICE INDEX

AIR POLLUTION CONTROL/EQUIPMENT

BHA Group, Inc
Gillespie & Powers, Inc.
Moltech
Opsis Inc.
Procedair
Pyradia Inc.

ALUMINUM INDUSTRY WEAR PARTS

High Performance Refractories /Saint Gobain
Industrial Ceramics
Permatech, Inc.
Thermal Systems America

ALUMINUM PROCESSORS

Christy Refractories
Consolidated Ceramic Products
Hodges Group, Inc.
Hoogovens Technical Services
Hydelko North America
Loma Machine Mfg

ALUMINUM PRODUCTION TECHNOLOGY & EQUIPMENT

ABB Industrie AG
Advanced Dynamics Corp Ltd
AEA Technology Engineering Svcs Inc
Aisco Systems Inc.
Almeq Norway AS
B & P Process Equipment and System LLC
ABB Bomem Inc.
Eirich Machines
Erico Products Inc
Fosbel Inc
Glama Maschinenbau GmbH
Hencon B.V.
Hodges Group, Inc.
Holton Machinery LTD
Hydelko North America
Jayne Industries
Jervis W. Webb Co
Kvaerner Process Technology
Lem High Current Systems
LOI, Inc.
Loma Machine Mfg
Maxon Corporation
Megaquip Industries Ltd
Moltech
Murlin Chemical Inc.
NKM
Noell Crane & Service Inc
Pechiney
Precision, Inc.
Pyrotek Inc.
Rex Roto Corp.
LMI Selcom
Sermas Industrie
Silver Needle
STAS Ltd
Techmo Car & Engineering
Thermal Systems America
Thermcon Ovens BV
VAW Aluminum Technologie GmbH
Wagstaff Inc

ALUMINUM QUALITY

ABB Bomem Inc.
MAGChem Inc.

ALUMINUM REFINING SYSTEMS

Aisco Systems Inc.
Asbury Fluxmaster
Hodges Group, Inc.
Hydro Aluminium Hycast
Lem High Current Systems
Master Alloys Co.
Noell Crane & Service Inc
Pyrotek Inc
STAS Ltd

ANODE ASSEMBLY

Erico Products Inc
Jervis B. Webb Company
KHD Humboldt Wedag AG
Precision, Inc.
Sermas Industrie

ANODE ROD STUB WELDING

Erico Products Inc
HOLCAN CONSTRUCTIONS PTY LTD
Precision, Inc.

AUTOMATION/COMPUTER SIMULATION

Advanced Dynamics Corp
AISCO Systems Inc
Alesa Alusuisse Engineering Ltd.
Applied Research Laboratories
Hamilton Research & Technology
Hatch Associates
Jervis B. Webb Company
LMI Selcom
LOI, Inc.
Loma Machine Mfg., Co., Inc.
LVE
Media Cybernetics
Noesis Vision Inc
Sentech
STAS
Thermcon Ovens BV
VAW Aluminium Technologie GmbH
Wagstaff Inc

BAUXITE CRUSHING & GRINDING

FCB
KHD Humboldt Wedag AG
Louis A. Grant Inc.
Pechiney

BORON NITRIDE COATINGS

Asbury Fluxmaster of Utah
Milward Alloys
ZYP Coatings, Inc.

CARBON PASTE PRODUCTION & EQUIPMENT

B & P Process Equipment and System LLC
Eirich Machines
FCB
KHD Humboldt Wedag AG
Kvaerner Process Technology

Pechiney
Procedair

CARBON TECHNOLOGY AND SUPPLIES

ABB Industrie AG
Alesa Alusuisse Engineering Ltd.
B & P Process Equipment and System LLC
Eirich Machines
FCB
Hamilton Research & Technology
Jervis B. Webb Company
KHD Humboldt Wedag AG
Kvaerner Process Technology
Megaquip Industries Ltd
Pechiney
R & D Carbon Ltd.
VAW Aluminum Technologie GmbH

CASTING

Advanced Dynamics Corp. Ltd.
Aisco Systems Inc.
Alan Worswick (Eng.) Ltd.
Albany Research Ctr/US Dept of Energy
Asbury Fluxmaster
ABB Bomem Inc.
Consolidated Ceramic Products
Harbison Walker Refractories
Holton Machinery LTD
Hydro Aluminium Hycast
Kabert Industries
Loma Machine Mfg
maerz-gautschi Industrial Furnaces
MAGChem Inc.
Master Alloys
Mechatherm International Limited
Murlin Chemical Inc.
Pechiney
Rex Roto Corp.
Thermcon Ovens BV
VAW Aluminum Technologie GmbH
Wagstaff Inc
ZYP Coatings

CEMENT

ABB Industrie AG
Pryor Giggey Co.

CHEMICALS AND ADDITIVES

AEA Technology Engineering Svcs Inc
Asbury Fluxmaster
Betz Dearborn
Lem High Current Systems
MAGChem Inc.
Master Alloys
Murlin Chemical Inc
Nalco Chemical Company
Shieldalloy Metallurgical Corp.

CLOTHING - PROTECTIVE

Pyrotek Inc.
Silver Needle

COMBUSTION TECHNOLOGY

AEA Technology Engineering Svcs Inc
Bloom Engineering Co., Inc.
Consolidated Ceramic Products
Erico Products Inc
Hotwork
maerz-gautschi Industrial Furnaces
Maxon Corporation
North American Manufacturing
Thermcon Ovens BV

COMPUTER SOFTWARE

AEA Technology
Clemex Technologies
ESM Software
Hamilton Research & Technology Ltd.
LOI, Inc.
Pechiney
Sentech
TexSem Laboratories, Inc.
SETARAM Inc.

CORROSION/SURFACE TREATMENT

Betz Dearborn
Nalco Chemical Company

DEGASSING

Asbury Fluxmaster
Blasch Precision Ceramics
Cast House Technology
Consolidated Ceramic Products
Hydro Aluminium Hycast
Metallics Systems
PCO M. Raadts
Pechiney
Pyrotek Inc.
SELEE Corporation
Saint-Gobain Industrial Ceramics, Inc
STAS

DROSS HANDLING EQUIPMENT

Alan Worswick Engineering Ltd
Gillespie & Powers, Inc.
Glama
Louis A. Grant Inc.
Mechatherm International Limited
Plibrico Company
Precision, Inc.
Pyrotek Inc.
Serma Industrie
STAS

ENGINEERING AND CONSULTING SERVICES

AEA Technology
Advanced Dynamics Corp. Ltd.
Aisco Systems Inc.
Alesa Alusuisse Engineering Ltd.
Almeq Norway a/s
Consolidated Ceramic Products
FCB
Fonderie Saguenay
Gillespie & Powers, Inc.
Hatch Associates
Hencon B.V.
Hoogovens Technical Services
Institute of Materials Processing/Michigan Tech
University

Jervis B. Webb Company
Loma Machine Mfg
Nalco Chemical
National Center for Manufacturing Sciences
PCO M. Raadts
Pechiney
Procon
Pryor Giggey Co.
R & D Carbon Ltd.
Rex Roto Corp.
Scharf Westfalia Industrial Systems GmbH
STAS
Techmo Car S.p.A.
TexSEM Laboratories
Thermcon Ovens BV
VAW Aluminum Technology GmbH
Wagstaff Incorporated

FILTRATION

BHA Group, Inc
Christy Refractories
Kabert Industries
McAllister Mills, Inc.
Metallics Systems
Pechiney
Procedair
Pyrotek Inc.
Rex Roto
SELEE Corporation
STAS
Vesuvius Hi-Tech Ceramics

FURNACES

Albany Research Ctr/US Dept of Energy
Fosbel Inc
Gillespie & Powers, Inc.
Hodges Group, Inc.
Jayne Industries
LOI, Inc.
Louis A. Grant Inc.
maerz-gautschi Industrial Furnaces
Mechatherm International Limited
Plibrico Co.
Poco Graphite, Inc
Pyradia Inc.
Seco/Warwick
Thermcon Ovens BV
Thorpe Technologies

GRAPHITE

Metallics Systems
Poco Graphite, Inc
Pyrotek Inc.
Serma Industrie

GRAIN REFINERS HARDENERS

Holton Machinery Ltd
Hydelko
KB Alloys Inc
Master Alloys
Milward Alloys
Shieldalloy Metallurgical Corp.
HF Measurement Systems for Pot Rooms &
Stacks
Opsis Inc.
STAS

IMAGE ANALYSIS

Clemex Technologies
Leco Corporation

INDUSTRIAL GASES

PC +O M Raadts
Opsis Inc.
Seco/Warwick

INGOT & SOW CASTING HANDLING & STACKING

Advanced Dynamics Corp Ltd
Alan Worswick (Eng.) Ltd.
Jervis B Webb Worldwide Co
LOI Inc
maerz-gautschi Industrial Furnaces
Megaquip Industries Ltd
Serma Industrie
Wagstaff

INJECTION MOLDING

National Center for Manufacturing Sciences

INSTRUMENTATION

ABB Bomem Inc.
Applied Research Laboratory
Clemex Technologies
Consolidated Ceramic Products
Hamilton Research & Technology Ltd.
Heraeus Electro-Nite Co
Leco Corporation
Lem High Current Systems
maerz-gautschi Industrial Furnaces
LMI Selcom
R&D Carbon
Sentech Corporation
TexSEM Laboratories
Thermcon Ovens BV

LUBRICANTS

Mag-Chem Inc.
Master Alloys
KB Alloys
MagChem Inc
Milward Alloys
Pyrotek Inc.
Shieldalloy Metallurgical Corp
ZYP Coatings

MASTER ALLOYS

Aleatur
Asbury Fluxmaster
Holton Machinery LTD
Hydelko North America
KB Alloys Inc
KBM/Affilips B.V.
London & Scandanavian
Master Alloys
Milward Alloys
Pyrotek Inc.
Shieldalloy Metallurgical Corp.

MATERIAL HANDLING

Advanced Dynamics Corp. Ltd.
Aisco Systems Inc.
Alan Worswick (Eng.) Ltd.
Alesa Alusuisse Engineering Ltd.
Almeq Norway a/s
ASAP Inc
Alu-Cut International
BHA Group
FCB
Glama Maschinenbau GmbH
Hencion B.V.
Jervis B. Webb
Loma Machine Mfg., Co., Inc.
Megaquip Industries Ltd
Murlin Chemical, Inc.
Noell Crane & Service
Precision Inc
Scharf Westfalia Industrial Systems GmbH
Thermcon Ovens BV

MATERIAL INFORMATION

AEA Technology Engineering Svcs Inc
CSM International
ESM Software
Metallurgical Society of CIM
NASA Materials Science Program
TexSem Laboratories, Inc.

MEASUREMENT/TESTING AND ANALYSIS

ABB Bomem Inc.
Applied Research Laboratory
Heraeus Electro-Nite
Institute of Materials Processing/Michigan Tech
University
Leco Corporation
National Center for Manufacturing Sciences
R & D Carbon Ltd.
LMI Selcom
Sentech Corporation
TexSEM Laboratories

MICROSCOPY

Clemex Technologies
Leco Corporation
TexSEM Laboratories

MOLTEN METAL PUMPS

Christy Refractories
Metallics Systems Co. L.P
Molten Metal Equipment Innovations
Pyrotek Inc.
STAS

PROCESS EQUIPMENT

ABB Industrie AG
B & P Process Equipment and System LLC
Eirich Machines
Hencion B.V.
Holton Machinery LTD
Jayne Industries

Jervis B. Webb Company
LOI, Inc.
Louis A. Grant Inc.
Maxon Corporation
National Center for Manufacturing Sciences
Premelt Systems
Pyrotek Inc.
Rex Roto Corp.
Scharf Westfalia Industrial Systems GmbH
Seco/Warwick
Thermal Systems America

PUBLISHERS

Aluminium Today
Cambridge Scientific Abstracts
Elsevier Science Publishers
Industrial Heating Magazine
Kluwer Academic Publishers
Light Metal Age
Metal Bulletin Journals
Metallurgical Society of CIM
Modern Metals Magazine
R & D Carbon Ltd.

RAW MATERIALS PRODUCTS/SERVICES

CSM International
Hydelko North America
Port of Longview
Pryor Giggey Co.
R & D Carbon Ltd.

RECYCLING/SCRAP PROCESSING

Almeq Norway a/s
Asbury Fluxmaster
Consolidated Ceramic Products
Eirich Machines
FCB
Hencion B.V.
Holton Machinery LTD
KHD Humboldt Wedag AG
LOI, Inc.
Louis A Grant
Mechatherm International Limited
Metallics Systems
Premelt Systems
Scharf Westfalia Industrial Systems GmbH
Thermcon Ovens BV
Thorpe Technologies

REFRACTORY AND INSULATING PRODUCTS

Blasch Precision Ceramics
BNZ Materials, Inc.
Borgestad Fabrikker AS
Christy Refractories
Consolidated Ceramic Products Inc
Fosbel Inc
Gillespie & Powers, Inc.
Gouda Vuurvast

Harbison-Walker Refractories Company
Jayne Industries
Kabert Industries
Louis A. Grant Inc.
maerz-gautschi ltd.
McAllister Mills, Inc.
Murlin Chemical Inc.
National Refractories and Minerals
North American Refractories Co.
Plibrico Co.
Premier Refractories
Pryor Giggey Co.
Pyrotek Inc.
Rex Roto Corp.
Saint-Gobain Industrial Ceramics, Inc.
SELEE Corporation
Skamol A/S
Stellar Materials
Thermal Ceramics/Thermic Refractories
Thermal Systems America
Unifrax Corporation-Fibers Division
Vesuvius Hi-Tech Ceramics
Western Industrial Ceramics
Zircar Products Inc.
ZYP Coatings, Inc.

RESEARCH & DEVELOPMENT

Albany Research Ctr/US Dept of Energy
Institute of Materials Processing/Michigan Tech
University
National Center for Manufacturing Sciences
La Société des Technologies de l'Aluminium
S.T.A.S. Ltée

SERVICE CONTRACTORS

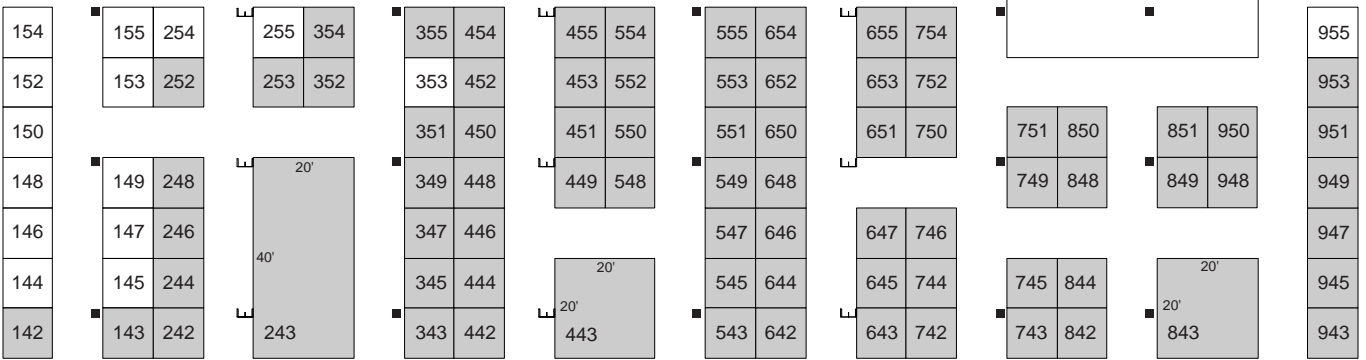
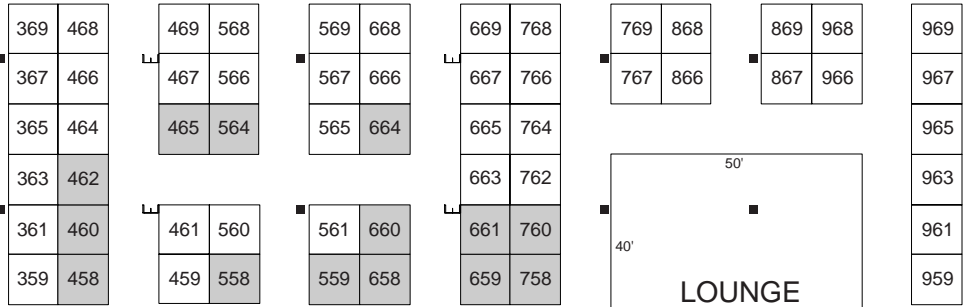
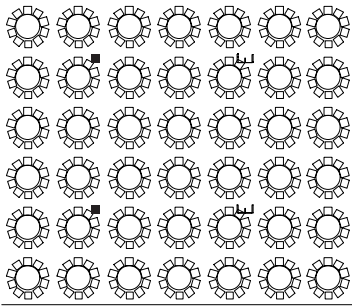
BHA Group
Christy Refractories
Consolidated Ceramic Products
Fosbel Inc.
Hatch Associates
Hotwork Corp
Noell Crane & Service Inc
Pryor Giggey Co.
R&D Carbon Ltd

WATER COOLING & TREATMENT

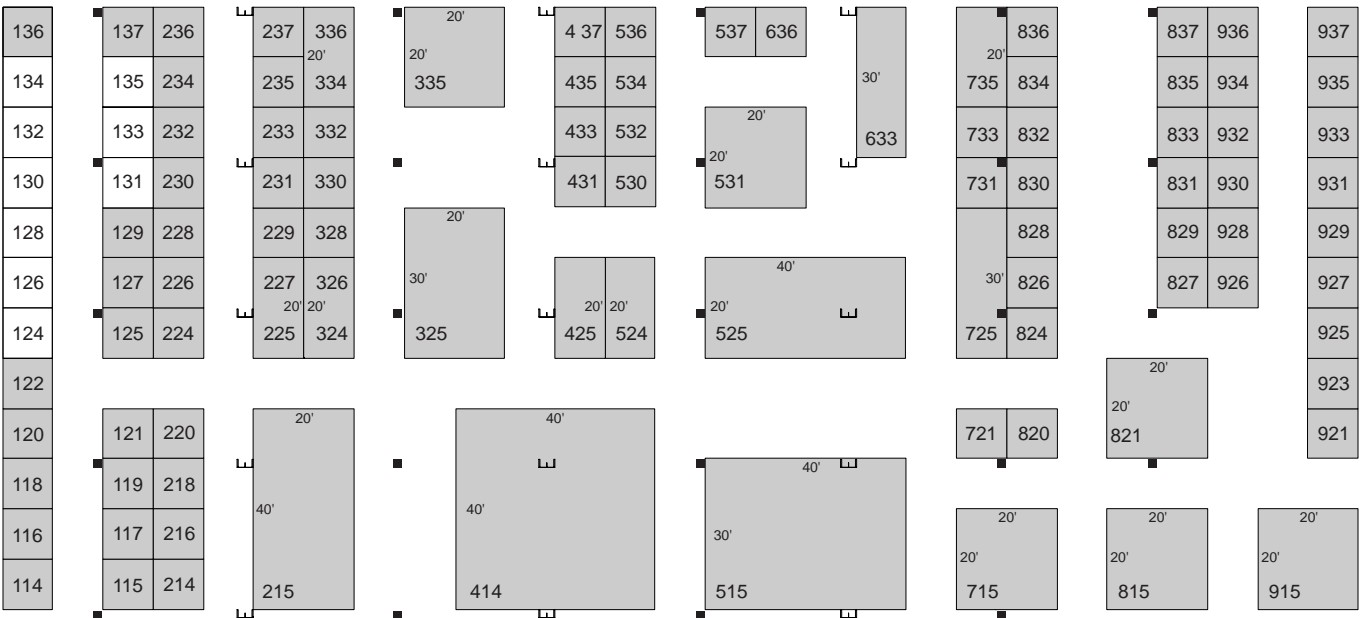
Betz Dearborn
Casthouse Technology
Mechatherm International Limited
Nalco Chemical Company
10/15/99

FLOORPLAN—as of 10/20/99

AUTHOR'S COFFEE



20' AISLE



ENTRANCE

ALPHABETICAL LISTING OF EXHIBITORS

2000 TMS ANNUAL MEETING EXHIBITION Opryland Hotel-Convention Center Nashville, Tennessee March 13 - 15, 2000

COMPANY	BOOTH #	COMPANY	BOOTH #	COMPANY	BOOTH #
ABB/Bomem, Inc.	224, 226	Performance Refractories	835, 837	Natl Center for	
ABB Industrie AG	526	Hodges Group Inc.	943	Manufacturing Sciences	951, 953
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AEA Technology Engrg Svcs Inc	559	Holton Conform	636	NKM	744
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Altek	843(4 sp)	Jobin Yvon/Horiba	558	Plibrico	234, 236
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Applied Research Laboratories	231	KB Alloys Inc	827, 829	Precision Inc.	833
Asbury Fluxmaster of Utah Inc	654	KBM Affilips B.V.	343	Premelt Systems	530, 532
B & P Process Equip & Systems	834, 836	Kempe International	930, 932, 934	Premier Refractories Inc	815 (4 sp)
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BHA Group Inc	746	Kvaerner Buss CPS AG	242	Pyradia	452, 454
Blasch Precision Ceramics	555	Leco Corporation	644	Pyrotek Inc.	414 (16 sp)
Bloom Engineering	925	Lem High Current Systems	125	R&D Carbon Ltd.	524
BNZ Materials Inc	552	Light Metal Age	446	Reftex	115
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Bricmont, Inc	760	Loma Machine Mfg. Co.	831	Scharf-Westfalia GmbH	936
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Hamilton Research & Technology	549	Molten Metal Equip Innovations	642	Unifrax-Fibers Division	935, 937
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				ZYP Coatings Inc	127

COMPANY PROFILES

A

ABB BOMEM INC.

#224, 226
Québec, Canada

www.bomem.com



ABB-Bomem's Metallurgical Instruments offer many effective solutions to the aluminium industry for inclusion and hydrogen measurement. Several measurement technologies are patented and licensed exclusively to Bomem by Alcan International Limited and N-TEC Ltd for distribution worldwide. ABB-Bomem also offers metallurgical technical support and measurement services.

ABB INDUSTRIE AG

#526
Zurich, Switzerland



ABB's Business Unit Building Material & Mineral Industries, headquartered within ABB Industrie AG, Switzerland, offers single products and site services up to large turnkey electrification for the construction, extension and modernization of smelter operations, mineral extraction and production facilities worldwide.

Owners, producers, suppliers, consultants and their engineers have come to appreciate the value of a single source to resolve critical issues. ABB safeguards the client's investment and ensures results by providing an integrated approach to engineering, supply, construction and management (ESCM).

ABB covers the full value-added chain, from the bauxite mine to the primary aluminum. We excel at merging equipment, skills and services into a comprehensive customized solution that

strengthens our clients' entire operation. ABB leads the market in key electrical generation, distribution and transformer rectifier systems.

ADVANCED DYNAMIC CORPORATION LTD.

#458
St Bruno, Quebec, Canada

Advanced Dynamics Corp. Ltd. designs and manufactures custom materials handling systems for primary aluminum smelters and secondary aluminum products producers.

Primary Producers

- Carbon anode handling equipment for both green and baked anodes, rodding room and ring furnace maintenance equipment
- Aluminum ingot sawing and identification equipment for round logs, T ingots and sheet ingots
- Aluminum ingot handling systems including downenders, billet stacking systems, transfer cars and rotary turntables
- Aluminum casting equipment including sow casting carousels and crucible tilters

Secondary Producers

- Coil handling equipment including turnstiles, powered transfer cars, wrapping systems and upenders.
- Tube handling cooling systems for drawbench automation, extrusion handling systems including pullers and flying cutoff saws.

Integrated Control Systems

- Computer linked PLC controls with panelview access screens, programmable identification by pin or character stamp, ink jet or bar code

Please call us at your convenience to discuss your equipment requirements and visit us at booth #458 at the 2000 TMS show.

AEA TECHNOLOGY ENGINEERING SVCS INC

#559
Bethel Park, Pennsylvania

www.aeat.co.uk



AEA Technology, a world-leading science and engineering service, will be displaying a TIME AND MONEY SAVING integrated package of products and services which eliminates expensive, time consuming experiments used in design to predict reactions, improve quality performance, and control environmental hazards.

We solve complex problems throughout all stages of the materials life cycle. For example, our products include powerful thermo-chemical software (MTDATA or THERMOCALC) for predicting phase behavior and properties; kinetic software (FACSIMILE or DICTRA) for solving

and modeling chemical reactions; and material specific databases for modeling processes. We also offer internationally recognized consulting and experimental research services which encompass both thermo-chemistry and chemical kinetics.

These materials-focused products and services bring CONFIDENCE in design, improved UNDERSTANDING and PREDICTION of processes for a range of customers in the materials sector.

AISCO SYSTEMS, INC.

#633, 635, 637
Burlington, Ontario, Canada



Aisco Systems Inc. provides engineered machinery, systems and integrated process solutions for the non ferrous metals industry including aluminium rod shops and casthouses, zinc refineries and copper tankhouses.

Rodding Room

Aisco is a technical leader in supplying rodding room equipment, from anode loading/unloading, butt bath cleaning systems, butt and thimble presses, cast iron thimble cleaning and rod reconditioning equipment through to anode and rod mating stations and iron pouring systems. In addition, Aisco provides material handling systems for baked anodes prior to entering the rod shop, including baked anode cleaning.

Casthouse

Aisco designs and manufactures fully automating sow casting and foundry ingot casting systems, including stacking and strapping equipment for use in primary and secondary facilities. In addition, we provide sawlines with fully automated material handling for slab/t-bar and billets.

Copper Tankhouse

Aisco produces copper anode preparation and tankhouse machinery and solutions to your tankhouse problems. Our unique carousel design provides high production rates and efficient use of plant space.

Zinc Refining and Casting

Aisco has a licence with Asturiana de Zinc of Spain to manufacture zinc processing machinery for the cellhouse. Aisco also produce jumbo ingot and slab casting systems for zinc metal products production.

Please call Aisco to discuss your equipment requirements or visit us at Booth 633, 635 & 637. at the 2000 TMS Show.

ALAN WORSWICK (ENGINEERING) LTD.

#355 <http://www.worswick.com>
Blackburn, England



Since its formation in 1960, Alan Worswick (Engineering) Ltd has developed and refined its unique rotary ingot casting machine together with downstream ingot handling equipment including ingot cooling conveyors and ingot stacking machines to provide a complete - automated ingot production system for most primary and secondary non-ferrous ingot production, enabling them now to offer the most comprehensive equipment list within this field.

Over the years, "Worswick" became known as an innovative designer and manufacturing company resulting in the receipt of many enquiries and subsequent orders for specialised machines for the non-ferrous metal industry including; billet stackers, anode producing machines, sow/block casters, lead dross removal machines and automated gravity diecasting machines, in fact equipment to produce everything from zinc balls to aluminium engine blocks.

To date, "Worswick" has built more than 300 casters and 100 stackers of various types and would be pleased to discuss your requirements from either our existing extensive range, or for custom designed - special purpose machines, either at Booth No. 355 at the 2000 TMS Annual Meeting & Exhibition in Nashville or e-mail us at sales@worswick.com

ALBANY RESEARCH CENTER, U.S. DEPARTMENT OF ENERGY

#848 www.alrc.doe.gov
Albany, Oregon



U.S. Department of Energy
1450 Queen Avenue, SW
Albany, OR 97321
contact: Paula Palmer - palmer@alrc.doe.gov

The Albany Research Center is a U.S. government materials research and development laboratory conducting research programs and collaborating in partnership with industries and other agencies, to provide solutions for corrosion, wear, melting and casting, and waste generation in industrial and power generation systems. Researchers at the Center determine factors that limit service life of materials, provide solutions to service-life problems through new materials technology, and develop and demonstrate technologies that reduce waste and pollution in materials processing and forming. Featured will be the following: Thin Walled Ferrous Castings, Low-Cost

Titanium Production, and Recycling /Remediation of Solid, Liquid and Hazardous Waste.

ALCAN INTERNATIONAL LTD.

#228, 230
Montreal, Quebec, Canada

ALEASTUR

#652 www.aleastur.com
Aviles, Asturias Spain

ALUMINIUM GRAIN REFINERS AND MASTER ALLOYS

Aleastur manufactures a comprehensive range of Grain Refiners and Master Alloys. The major activity is concentrated in the production of AlTiB alloys in rod completing its product range with other alloys such as AlSr, AlB, AlTi, AlZr, etc.

From receipt of order to despatch of goods, the dedication of Aleastur to quality is paramount. Aleastur has had since 1993 the Certificate of Approval for Quality Assurance (ISO 9002).

Currently, Aleastur is selling its products to more than 50 countries and is represented all around the world.

ALMEQ NORWAY AS

#214, 216
Langhus, Norway

ALTEK INTERNATIONAL, INC

#843 (4 sp) www.altek-dross.com
Exton, Pennsylvania

ALTEK International, Inc. and its staff have been active in the recycling of aluminum dross for nearly 30 years. We have devoted many years to researching and developing dross treatment processes and equipment, always striving to offer the safest, most efficient and environmentally clean systems for the aluminum industry.

OUR GOALS:

- Advance Meltshop Technology
- Reduce Dross Generation
- Increase In-House Recoveries
- Maximize Overall Recoveries
- Clean The Casthouse Environment
- Minimize Waste Streams

OUR SERVICES:

- Exclusive North American Representatives for HERTWICH ENGINEERING
- Worldwide Sales and Marketing of THE PRESS and THE TUMBLER
- Consulting Services
- Custom Design & Engineering
- Training & Customer Support
- Product & Process Development
- Dross & By-Product Marketing Support
- North American Sales Representative for REMETAL, SA (SPAIN) TECHNOLOGY

OUR DROSS RECYCLING TECHNOLOGY:

PHASE I - THE PRESS, The Hot Dross Treatment System

PHASE II - THE TUMBLER, The Low Impact Cold Dross Treatment System

OUR TEAM:

The ALTEK team includes a full range of engineering skills including design, electrical, mechanical, and metallurgical engineering. ALTEK's manufacturing includes facilities in Alabama, Pennsylvania, Missouri, and Indiana. Technical support facilities are available abroad in England and Germany.

The ALTEK technology spans the activities of the entire casthouse from preparation of the feed materials, melting, skimming, and dross treatment to processing the waste stream, offering the best solution for each application.

e-mail: altek@altek-dross.com

ALUCUT INTERNATIONAL

#435
Katy, Texas

ALUMINIUM TODAY

#650 www.dmg.co.uk/altoday/
Redhill, Surrey, England

Working with industry for the past ten years

Aluminium Today is a leading international journal for the aluminium production and processing industries. Read widely for its industry news and technology reports, Aluminium Today charts closely developments all the key around the world.

Aluminium Today is published by DMG Business Media Ltd which is also responsible for organizing the world-leading aluminium industry events ALUMINIUM ESSEN 97/98 and 2000, ALUMINIUM ASIA 98 and ALUMINIUM SOUTH AMERICA 99. Together the journal and industry events represent the leading group of media services for the international aluminium industry.

Alesa Alusuisse Engineering Ltd

#328 www.alusuissealesa.com



Serving the industry from their engineering offices in Switzerland, North America and Australia, Alesa Alusuisse has a deservedly excellent reputation in the field of materials handling as well as technologies for the production of alumina and anodes. Furthermore, Alesa offers Alusuisse's proven know-how for the complete retrofit of smelters.

Alesa specializes in turnkey projects featuring systems which emphasize low energy consumption, operational efficiency, environmental protection and automation that ensure competitive advantages for the client. Innovative skills and experience in solving clients' problems have characterized Alesa projects worldwide for over 30 years.

APPLIED RESEARCH LABORATORIES

#231
Dearborn, Michigan

For over 60 years, Applied Research Laboratories (ARL) has been a leading innovator in analytical instrumentation. ARL's current product offering includes a series of optical emission (OE) spectrometers known for precision, accuracy and reliability. In addition, ARL manufactures sequential and simultaneous X-Ray fluorescence (XRF) instrumentation featuring: integrated XRD, fast gearless goniometer, small footprint and large X - Y sample changer. Both XRF and OE spectrometers are available as fully automated laboratories.

ASBURY FLUXMASTER OF UTAH, INC.

#654 <http://www.asbury.com>
Rodeo, California
A Division of Asbury Carbons



ASBURY FLUXMASTER, a division of Asbury Carbons, is a vendor of quality consumable foundry materials. Our QS-9000 certified facility in Utah produces a wide range of aluminum fluxes, titanium/boron master alloys, degasser tablets, coatings, and injection fluxes. ASBURY FLUXMASTER also markets an entire line of aluminum master alloys produced by our partner, ALEASTUR.

ASBURY FLUXMASTER offers customers the benefits of a professional, knowledgeable staff, a proven line of products, custom packaging options, and quality customer service. Asbury Fluxmaster products are marketed in the United States through our network of Territory Managers and distributors. Fluxmaster also has international agents and sales in over 20 countries.

Registered to QS-9000 by



B

B&P PROCESS EQUIPMENT AND SYSTEMS

#834, 836 www.bpprocess.com
Saginaw, Michigan



B&P Process Equipment and Systems, Inc. (manufacturers of Baker Perkins machinery) is a supplier of specialized process equipment for the production of carbon paste, energetic material, plastics, industrial chemicals, and for chemical separation. We have supplied batch anode and cathode paste mixers to the aluminum industry since 1903. Many built since the 1930's are still in service. In 1952, the aluminum industry production requirements grew, and we offered the polykneader, which is a continuous carbon paste mixer. Today, our batch mixers and polykneaders are used worldwide in the production of carbon paste. B&P also offers a complete line of continuous pusher centrifuges for liquid/solids separation.

BENCHMARK STRUCTURAL CERAMICS

#751 www.benchmarkceramics.com
Cheektowaga, New York

Benchmark Structural Ceramics Corp., has substituted the use of sintered silicon nitride and sialon parts utilized in molten aluminum handling and service with Bensal™, an advanced sialon bonded ceramic composite. The new product is completely non-wetting, with good thermal conductivity, and over 1,000°C thermal shock capacity. Its unique microstructure allows for hundreds of repeated immersions in molten metal straight from room temperature, with no preheating necessary.

Contact us at 716-565-1060.

BETZ DEARBORN

#927, 929 www.betzdearborn.com
Trevose, Pennsylvania



BetzDearborn markets engineered water treatment programs that use customized products and value-added services in solving problems associated with boilers, cooling towers, and influent and effluent systems in a wide variety of industries, commercial establishments, and institutional facilities. Hundreds of BetzDearborn researchers simulate the operation of a water system, troubleshoot, and isolate problems in one of the largest water research facilities in the world.

BHA GROUP, INC

#746 <http://www.bhagroup.com>
Kansas City, Missouri



BHA Group, Inc. is the global leader in air pollution control replacement parts and services for baghouses, electrostatic precipitators, and evaporative gas conditioning equipment. The BHA philosophy of problem solving and innovative product design have positioned the company as the world's leading single source supplier for air filtration parts, engineering systems, and troubleshooting services. All of BHA's manufacturing facilities in the U.S. are ISO 9001 or 9002 registered, ensuring customers that BHA's quality systems meet or exceed standards accepted worldwide. BHA is committed to helping its customers understand their APC equipment and the products that optimize its performance.

BLASCH PRECISION CERAMICS

#555
Albany, New York

Founded in 1979, BLASCH PRECISION CERAMICS manufactures complex refractory shapes via a patented injection molding process. Parts manufactured using this proprietary process have unique qualities that offer distinct advantages such as precise tolerances without machining (+/-0.5%), excellent thermal shock resistance, controlled porosity, sub-particle distribution control, and outstanding resistance to spalling, erosion, and metal penetration.

In addition, parts intended for aluminum applications are treated with a proprietary non-wetting agent. So whether you need low pressure stalk tubes, rotary degassers, thermocouple protection tubes, porous plugs, or immersion heater tubes, Blasch can deliver.

A dedicated staff of engineers is always available to develop materials and design parts that satisfy specific customer needs. We welcome you to visit us at booth 555.

BLOOM ENGINEERING CO., INC.

#925 <http://www.bloomeng.com>
Pittsburgh, Pennsylvania



Bloom Engineering Company, Inc. designs and manufactures burners, controls and combustion equipment for the aluminum, other non-ferrous and ferrous industries.

Representatives from Bloom will be available to discuss Bloom's complete burner line including Fuel Energy, High Intensity Burners and Regenerative Burners as well as their application to various furnaces used in the industry. Featured

at the show will be Bloom's Gemini Series, LumiFlame Series and HTR (High Thermal Release - flat profile flame) conventional and regenerative burners. Field measurements have confirmed NOx production from Bloom's complete line of Ultra Low NOx burners are the lowest in the industry.

BNZ MATERIALS, INC.

#552 <http://www.bnzmaterials.com>
Littleton, Colorado



BNZ Materials, Inc. consists of two businesses which are appropriate to the metals industry. The Zelienople, Pennsylvania plant manufactures/markets Insulating Firebrick and complementary refractory products such as mortars, aggregates, castables and calcium silicate block. Insulating Firebrick are used in a variety of applications in the metals industry, from carbon baking furnaces to melting and holding furnaces.

The Billerica, Massachusetts plant manufactures a line of calcium silicate boards under the Marinite trademark. They are machined into various parts for conveying, containing, and forming aluminum, lead, zinc, tin and other non-ferrous metals. These parts include spouts, floats, launders, distribution plates, head boxes, baffles, headers, tips, rings, distribution boxes, stoppers, basins, snouts, orifice plates, hot top and ingot mold liners as well as parts in the metal handling and casting systems of many casting machines.

BORGESTAD FABRIKKER

#244, 246
Porsgrunn, Norway



Borgestad Fabrikker AS founded in 1887, started as brickworks but grew rapidly into a producer of quality refractories. In 1996, Höganäs Bjuf, with more than 200 years experience of manufacturing refractory bricks, became a part of Borgestad. Today Borgestad is truly international, exporting over half its production and is the largest supplier of non-basic refractories to furnace and kiln related industries. Products that ensure long life and maximum performance are only one part of the Borgestad commitment to customer satisfaction. Projecting, project control, contracting, installation, repair and maintenance are services we offer to ensure that your furnaces run smoothly with down-time periods kept at a minimum.

BROCHOT SCS

#137
Tremblay-en-France, France

The BROCHOT company designs, manufactures, carries out the installation, provides after sales services, provides spare parts of special machines, and complete plants for the primary aluminium and magnesium industries. With its three departments, Brochot -Syprim - Berger, BROCHOT proposes the full range of equipment necessary for aluminium smelters:

BROCHOT:

- Electric pot ramming machines
- Ingot casting & stacking lines
- Dross handling equipment (Ekumax)

SYPRIM:

- Anode cooling
- Anode handling and storage
- Anode rodding shop

BERGER:

-Special vehicle for anode & molten metal transport

- Furnace charging & tending vehicles

Come to our booth # 137 and find out more on our latest developments and discuss innovative solutions to your equipment.



C

CAMBRIDGE SCIENTIFIC ABSTRACTS

#655
Bethesda, Maryland

CASTHOUSE TECHNOLOGY

#537
Guelph, Ontario Canada

Cast House Technology specializes in hot metal handling and metal treatment systems. In particular in-line trough degassing equipment, and pulsed water cooling technology for controlling butt distortion in heavy sheet ingot. Featured at the TMS Exhibition are the Cast House Submerged Jet Trough Degassing Reactor and the Cast House Pulsing Valve.

CHRISTY REFRACTORIES

#750, 752 www.christyco.com
St. Louis, Missouri



CHRISTY REFRACTORIES COMPANY

4641 McRee Avenue

St. Louis, Missouri 63110 U.S.A.

phone: (314) 773-7500

fax: (314) 773-8371

www.christyco.com

Christy has specialized since 1922 in customized refractory solutions for the non-ferrous industry and offers:

- METCAST® ceramic foam filters
- CUSTOM CRAFTED™ fabricated shapes
- REF-SiC™ (clay bonded) and NITRO-SiC™ (nitride bonded) Silicon Carbide shapes.
- A full line of refractories and insulation products
- Refractory contracting services

Christy Refractories is pleased to introduce its line of Christy Cast FS™, a proprietary castable which averages 2-3 times the life of existing products for the aluminum, copper and zinc industries. Applications include:

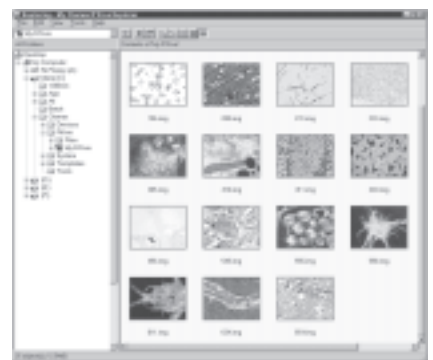
- Downspouts
- Launders
- Nozzles
- Filter bowls

Christy Industrial Services repairs aluminum melting and holding furnaces as well as other industrial heating equipment.

CLEMEX TECHNOLOGIES, INC.

#664 <http://www.clemex.com>
Longueuil, Quebec, Canada

CLEMEX
THE IMAGE ANALYSIS PEOPLE



Manage and view thumbnails of your images in Clemex R'Kive Explorer

Clemex Technologies, Inc. is a leading developer and marketer of image analysis and man-

agement systems for use in quality control and R&D labs. The company offers a family of turn-key systems and application specific software modules designed to facilitate quantitative microscopy. Through highly intuitive and automated integrated systems, Clemex Technologies gives labs a greater competitive advantage by dramatically improving archaic image analysis and archiving processes. At the heart of each system is Clemex Vision - a robust, all-purpose image analysis software application. Clemex will be exhibiting its Clemex Impak system along with Clemex R'Kive - a scientific image archiving and management package.

CONSOLIDATED CERAMIC PRODUCTS, INC.

#531, 533 <http://www.ceramics.com/ccpi/>
Blanchester, Ohio



For 42 years, Consolidated Ceramic Products has been of service to the aluminum industries worldwide. An innovative manufacturer and marketer of ceramic based products, it maintains operations around the world.

CCP products and services for temperature measurement, chemical modification and physical transport of molten aluminum include:

- * Thermocouple protection tubes.
- * Thermocouple elements.
- * ACCUTIP® Dipping thermocouples.
- * Ceramic coated fluxing pipe.
- * Riser stalk tubes.
- * Tapout cones with matching cast iron plugs.
- * Radiant and immersion heaters.
- * Thermal profiling and combustion engineering services.
- * SIALON thermocouple protection tubes, level sensors, riser stalk tubes, heater tubes, and special shapes.
- * Custom cast iron castings.
- * Pre-cast liners for degassing and filtration systems.

In addition, Vision Engineered Products and C Systems, both Divisions of CCPI Inc., will be exhibiting at the CCPI booth.

Vision Engineered Products offers specialized materials for molten metal processing and high temperature applications.

CSM INTERNATIONAL

#659, 661
Cleveland, Ohio

E

EIRICH MACHINES

#330, 332 <http://www.eirich.de>
Gurnee, Illinois



Eirich Machines, Inc. of Gurnee, Illinois, manufactures the Eirich Intensive Mixer, known for the excellent mix quality it produces, its energy efficiency and its durability.

The rotating pan delivers material to a counter-rotating mixing tool, creating a fluidized zone for thorough mixing. A combination wall/bottom scraper eliminates any dead spots and assures a complete discharge.



The mixer can be configured for agglomerating or disagglomerating, coating, dispersing, fiberizing, mixing, moistening, plasticizing, reacting, slurring, stripping or suspending. Eirich's proprietary technology, EVACTHERM® (Eirich Vacuum Thermo Technology), allows for mixing and cooling in a single unit.

Supporting equipment ranges from weighing and conveying equipment to fully automated control systems.

For more information, visit us at www.eirich.de

ELSEVIER SCIENCE

#658, 660 <http://www.elsevier.nl>
New York, New York



ELSEVIER
SCIENCE

Elsevier Science is the foremost publisher of scientific journals, books and multi-volume reference works in the rapidly growing field of Materials Science. Supplementing our traditional paper products, are new CD-ROM and web-based products specifically designed for the Materials community. Visit our booth for demonstrations, free sample copies of our journals and a special conference discount on books. Further information about our products and services can be found on the Internet: www.elsevier.nl

ERICO, INC.

#545, 547 www.erico.com
Solon, Ohio

CADWELD® exothermic welding is a process for making large and complex welded electrical connections of aluminum-to-aluminum, copper-to-copper or copper-to-steel in which no external source of heat, such as electricity or gas, is required. The process produces a permanent molecular bond.

CADWELD connections...

- * assure that the current-carrying capacity of the connection is equal to or greater than the conductor's.
- * will not loosen in service.
- * electrical resistance will not increase with age.
- * require no maintenance.
- * can be made to any size or shape of conductors.

CADWELD connections can be made in a highly magnetic environment.

ESM SOFTWARE

#118
Hamilton, Ohio



ESM Software will exhibit a large collection of materials science software covering materials properties, thermochemistry, crystallography, and materials processing. Products include version 3.0 of TAPP, a database of thermophysical prop-

erties of pure compounds; MAPP, a database of properties of engineering alloys and polymers; ChemSage and HSC Chemistry for calculation of complex phase equilibria; IceNine phase diagram drawing software; metal and ceramic phase diagram CD-ROMs; and crystallography databases and crystal drawing software; Most of the software packages can be previewed at <http://www.esm-software.com> and <http://www.materialize.com>.

EXPLORANIUM

#232
Rio Rancho, New Mexico

EXPLORANIUM

RADIATION DETECTION SYSTEMS

Exploranium is the world's leading supplier of Radiation Detection Systems for use in industrial, environmental, and geophysical applications. Exploranium Radiation Detection Systems are on the job 24 hours a day, 7 days a week protecting industrial workplaces in more than 25 countries around the globe. Products include gate entrance monitors, conveyor monitors, crane systems, charge bucket monitors, handheld detectors, and laboratory instrumentation. Exploranium proprietary Vehicle-In Background measurement combined with coincidence signal processing techniques enables detection of extremely low levels of radioactivity. Exploranium is able to supply the necessary level of radiation detection capability for your workplace.

F

FCB/Procedair

#335 (4 sp) Dascal@fcb-group.com
Givors Cedex, France



FCB is the world leader in supplying complete green anode plants, with about 40 paste plants supplied all over the world. Depending on Customer's requirements, FCB will supply either complete new green anode plants, or some particular process sections (crushing & screening, fines grinding, proportioning, preheating & mixing, vibrocompacting & anodes cooling...etc). FCB is also able to upgrade any anode plant or Söderberg paste plant or to convert a Söderberg plant into a prebake green anodes plant while updating the technology and increasing the capacity if needed.

FCB is also a major supplier of other units in smelter carbon plants which are:

- * bath grinding with totally air swept autogenous mill
- * anode butts crushing
- * liquid pitch storage
- * spent pot lining grinding

FCB has developed a wide range of equipment to be incorporated in such plants.

FONDERIE SAGUENAY INC

#460, 462
Chicoutimi, Quebec, Canada

Located in Quebec, Canada, Fonderie Saguenay is a jobbing foundry producing gray & ductile iron castings in the weight range of 200-15,000 pounds. A large portion, more than 50% is dedicated in supplying premium parts to the

aluminum industry.

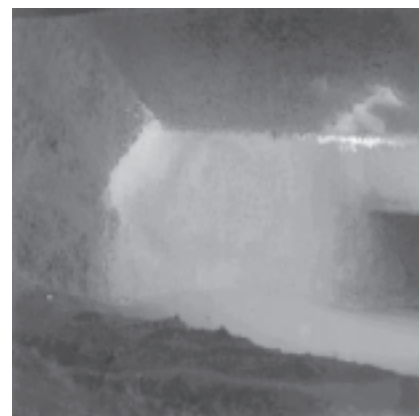
You can benefit from 30 years + of experience in this field where attention to details makes a big difference. From siphon sections, pouring spouts to one-piece holder siphons and cross pans, solutions are tailor-made to fit your needs.

Operated with the assistance of its owner Fonderie Saguenay, Métallurgie Brasco has been involved in the sealing of 41000 cathodes and the lining of 2000 pots, all which using the Pechiney technology.

Métallurgie Brasco is supplying construction & maintenance services in Quebec since 1984 and has supplied management and engineering services, on site, to the ALUSAF & ALUAR projects.

FOSBEL

#832 <http://www.fosbel.com>
Berea, Ohio



Aluminum Furnace Repair at Operating Temperature

The Fosbel Ceramic Welding process exothermically fuses new refractory to the existing parent material while the furnace continues to operate at temperatures in excess of 1300°F. Ceramic welding developments now include materials made for restoring 60%, 70%, and 80% alumina materials for metal line, roof, side wall and various other repairs. These materials create a long lasting, durable bond between the weld mass and the substrate giving extraordinarily long life to the repair areas. Whether used as a repair

method or as preventative maintenance to extend the furnace campaign life, Fosbel Ceramic Welding is a fast and effective way to keep your furnace in operation without costly downtime.

G

GILLESPIE & POWERS, INC

#534
St. Louis, Missouri

- Furnace upgrading and modification-improving efficiency, melt rate and pollution control.
- Sow preheating with our patented reverse flow melter.
- Decoating with our patented mass flow recirculation system, all types of scrap.
- Controlled variable scrap feed systems for conveying, submerging, and salt feed. Two styles of submerging devices.
- Unique designs to resolve specific problems-eliminate water cooling, sealed charging, flat removable roofs, low profile doors and others.
- In the recycling industry, systems include bale breaking, shredding, separation, decoating, vortex submerging, melting and holding furnaces including rotary furnaces, and transport ladles.

GLAMA MASCHINENBAU GmbH

#352, 354
Gladbeck, GERMANY



GLAMA has designed and built heavy-duty Mobile Equipment for Aluminium pot rooms, cast houses and anode rodding shops throughout the world for almost 30 years. The following types of mobile equipment are available.

- Anode Changing Vehicles
- Hammer Crustbreakers
- Tapping Trucks
- Anode Pallet Transporters
- Furnace Charging Machines
- Furnace Tending Machines
- Molten Metal Carriers
- Ladle Charging Trucks
- Butt Cleaning Manipulators
- Coil Lift Trucks

GLAMA's experience of many years of producing machines with a unique combination of advanced control and rugged, reliable construction is evident in the several hundred machines now in service. GLAMA equipment withstands the heat, dust, vibration and battering of heavy industry while delivering precise handling performance.

GOUDA VUURVAST

#543
Gouda, Netherlands

N.V. Gouda Vuurvast manufactures, supplies and installs high quality refractory materials for close to one century. With production facilities in the Netherlands, N.V. Gouda Vuurvast does supply all major industries throughout the world. The integrated approach of refractory-research, engineering, production and installation (supervision) is unique and enables N.V. Gouda Vuurvast to guarantee high performance refractory applications. Worldwide supply, flexibility, and long-standing experience make N.V. Gouda Vuurvast your reliable partner for all refractory applications. In the aluminium industry, N.V. Gouda Vuurvast is world-famous for its AK 46 S refractory brick used in Carbon Bake Furnaces of all major designs and its AK 85 range of refractory bricks suitable for all types and designs of holding and melting furnaces.

Contact us at Sales@goudarefractories.com

H

HAMILTON RESEARCH & TECHNOLOGY

#549
Calcutta, WB, India

Hamilton Research & Technology Ltd. (HART) offers Process Control System for Aluminium reduction plant and Carbon anode baking furnaces.

Electronic Pot controller (EPC), the main building block in the process control system, provides following control over the process:

- Alumina Feed Control
- Automatic Resistance & Noise Control
- Anode Stud Pulling Compensation
- Tapping Compensation
- Aluminium Fluoride regulation
- Anode effect prediction and Killing

Controller for the Anode baking furnace provides following functions:

- Ensures all anodes are baked according to the desired heating curve.
- Ensures maximum fuel efficiency & complete combustion.
- Optimises burning of pitch volatile.
- Minimises variation in flue & refractory temperature.
- Identifies burner problems.
- Ensures maximum utilisation of flue gas energy.
- Raises alarm in abnormal conditions

HARBISON WALKER REFRACTORIES CO.

#735, 737
Pittsburgh, Pennsylvania www.hwr.com



Manufacturer of **A.P. Green** Brands

Harbison-Walker Refractory Company will display key brands for both metal contact and carbon bake applications. Visitors will find information about high performance products such as GREENKLEEN, VERSAFLOW, and PNEUCRETE monolithics for aluminum contact as well as KALA brick which is an industry standard for carbon bake furnaces. INSWOOL ceramic insulating products will also be highlighted.

HATCH ASSOCIATES LTD.

#431, 433
Mississauga, Ontario, Canada



HATCH

GALLETTA

ENGINEERING CORPORATION

Hatch/Galletta provides professional engineering and MES software implementation services to the aluminum and non ferrous industry for:

- primary smelting and carbon plants
- casting and heat treatment
- rolling and fabrication
- recycling and environmental projects

HENCON B.V.

#742
Ulft, The Netherlands
e-mail address: info@hencon.nl



Backed by more than 45 years experience, Hencon Holland is a main and worldwide supplier in the field of special mobile equipment for the aluminium industry.

The delivery program covers the complete range for potroom (Söderberg and prebaked) and

for the casthouse, such as:

- Anode Pallet Transporters
- Ladle Transport and Tilting Vehicles
- Tapping Trucks
- Vacuum Cleaners
- Vacuum Systems
- Alumina Feeders
- Anode Covering Vehicles
- Anode Briquette Feeders
- Crust Breakers
- Bath Cleaning Machines
- Combined Feeding Trucks
- Anode Changing Machines
- Rack Raising Machines
- Spading Machines
- Pot Skimming Vehicles
- Pot Trimming Vehicles

Casthouse equipment:

- Furnace Skimming Machines
- Furnace Charging Machines
- Ladle Transporters
- Sideloader

Recent developments, such as the new design of Hencon's Potroom Vacuum Cleaners, will be shown at the 2000 TMS Annual Meeting.



Hencon's new design of potroom Vacuum Cleaner H-7000



Hencon Furnace Skimming

HERAEUS ELECTRO-NITE COMPANY

#926, 928
Philadelphia, Pennsylvania

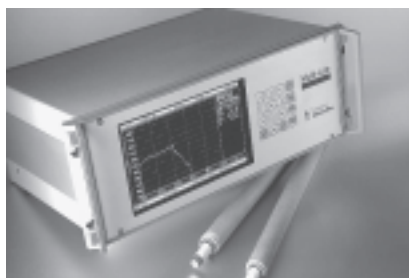
Heraeus Electro-Nite Co., the world's largest developer and producer of sensors for the molten metal industry, will be exhibiting several sensors for the primary aluminum smelter.

The Cry-O-Therm(tm) "Superheat" sensor has been developed to provide the potline with an almost instantaneous reading of the bath and liquidus temperatures. It is being shown that direct measurements of the liquidus temperature in industrial cells by the Cry-O-Therm probe is clearly advantageous compared to the alternative methods for determining the liquidus temperature.

The Positherm-AL® Type "S" disposable ther-

mocouple and DT-280 digital temperature measuring system provide the potroom operator with a faster, more accurate, and more reliable temperature of the cryolite bath. The companion datalogger allows the operator to store the information collected over the course of the day and download it directly into the computer at the end of his shift.

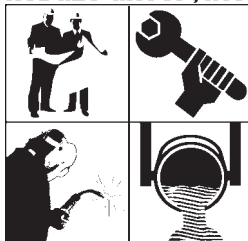
Stop by the HEN booth to learn more about our sensors for the primary aluminum smelter.



HODGES GROUP, INC.

#943 www.hodges-group-inc.com
Portland, Tennessee

HODGES GROUP, INC.



Established in 1990, Hodges Group, Inc., is a family owned and operated company specializing in turnkey solutions for construction, industrial maintenance, fabrication and refractory projects. Recipient of the "Industrial Excellence Award" from the Tennessee Department of Economic and Community Development, Hodges Group, Inc., is one of Tennessee's fastest-growing companies with a reputation for service and excellence.

Headed by James G. Hodges, Hodges Group, Inc. is one of the state's leading construction companies offering specialized refractory products and services. More recently, the company completed construction of an \$8 million aluminum recycling plant located in Seneca, New York for Scepter Inc.

Tel: 615-325-2741 Fax: 615-325-3128
Email: hodges@hodges-group-inc.com

HOLCAN CONSTRUCTIONS PTY LTD.

#554
Queensland, Australia

HC HOLCAN ANODE ROD WELDING SYSTEMS.

The Holcan Welding System offers an alternative to hand, friction or flat butt welding of anode rod stubs and adds a degree of automation at a low capital cost.

Our system will outperform manual welding methods by up to 60%.

Simplistic design and proven reliability allows for in-house maintenance to be carried out on all pieces of equipment therefore eliminating the need for technical assistance from outside sources.

HOLTON/CONFORM

#636 www.holton-conform.com
Holton Machinery Ltd
Albany house, Elliott Road, West Howe
Bournemouth, Dorset, BH11 8JH, England
Tel: +44 (0) 1202 581 881
Fax: +44 (0) 1202 581 789
E-mail: sales@holton-conform.com



HOLTON CONFORM

Holton Machinery Limited manufactures the Holton Conform™ range of continuous rotary extrusion machines which are now in profitable production in 22 countries around the world.

Holton Machinery is a world leader in continuous rotary extrusion, with over 20 years experience and the backing of their multi-national parent company Outokumpu.

Holton Conform™ lines are used for the manufacture of high quality master alloys, refrigeration and air conditioning tubes and to clad CATV cable and fibre optic communication cable.

Visit us on stand 636 and discover the next generation of continuous rotary extrusion - Conform 2000™.



CAPTION: Holton Conform C500H machine.

HOOGOVENS TECHNICAL SERVICES

#645, 647
Burlington, Ontario, Canada

HOTWORK Division of Fosbel, Inc.

#830
Lexington, Kentucky

Refractory Dryouts and Heatups

Since our inception in 1965, highly trained and experienced technicians have serviced over 10,000 job sites in all continents. Our reputation for performing refractory dryouts and heatups of furnaces is second to none.

Hotwork is the pioneer of the convective heating process, which simplifies refractory dryouts and heatups. With our help, you get into production more smoothly.

The application has been particularly beneficial for the aluminum industry where we introduced the concept in 1974. We were able to reduce the heatup from the traditional fourteen (14) days to an average of four (4) days or less. That was over 1,000 furnaces ago.

Need professionals to bring your furnace on stream? Contact:

Hotwork Division of Fosbel, Inc.
223 Gold Rush Road
Lexington, Kentucky 40509
Tel: (606) 276-1570
Fax: (606) 276-1583
E-mail: hotwork@worldnet.att.net

HYDELKO NORTH AMERICA

#324, 326
Marietta, Ohio



Hydelko was founded in 1990 and has quickly become an established quality supplier of aluminum grain refiners and master alloys to the worldwide market.

The manufacturing plant at Rjukan, Norway is dedicated to the production of high quality products. Hydelko's state-of-the-art manufacturing technology generates products with exceptional grain refining efficiency and a high degree of metal cleanliness.

Consistently high quality is secured through statistical process control and rigorous quality assurance in compliance with the requirements of ISO 9001 standards.

Hydelko's considerable expertise and technical competence form a solid basis for innovation, product development and customer support.

Please visit us at our exhibition booth number 324, 326.

HYDRO ALUMINUM HYCAST a.s.

#243 (8 sp)
Sunndalsra, Norway



The Hycast division of Hydro Aluminium is located nearby the Sunndal plant in Norway. In addition to the main office, Hycast has a US office in Louisville and are also working closely together with other Hydro offices world wide. Hycast is responsible for important activity of Hydro, and is capable of supplying the aluminum industry with the following equipment:

- 1) Melt Refining Systems;
- 2) RAM (removal of alkaline metal) systems; and
- 3) Gasslip Hot-Top mold systems for multistrand billet casting (not for sale outside Hydro).

In addition to being an equipment supplier, Hycast has high competence in all aluminum casthouse processes, by having skilled personnel in metallurgy, casthouse operation, engineering and automation.

Choose Hycast as your technology partner for better operation and profitability.

I

INDUSTRIAL HEATING MAGAZINE

#444
Pittsburgh, PA

J

JAYNE INDUSTRIES INC

#449 www.jayneindustries.com
Stoney Creek, Ontario, Canada

Jayne Industries manufactures the complete line of stainless steel V anchors, c clips, studs and threaded products for refractory and ceramic fiber linings. Jayne has provided products & services to the Aluminum, and other Non Ferrous and Ferrous Industries for over 30 years.

Hexmesh and accessories as well as Jayne large volume Refractory Pan & Paddle mixers are manufactured at our Stoney Creek, Ontario Canada facility. Jayne also supplies cast alloy castings and Fibercon stainless steel fibers for Refractories.

Visit our booth #449 to further discuss your anchor and hardware requirements.

JERVIS B. WEBB WORLDWIDE COMPANY

#743, 745 <http://www.jerviswebb.com>
Farmington Hills, Michigan

Jervis B. Webb Company
MATERIAL HANDLING SYSTEMS INTEGRATORS



Heavy duty roller conveyor transports anode blocks through this custom designed casting station, where the blocks are mated to the rods. Overhead power and free conveyors will transport the rodded anodes to the alumina spray station.



Overhead power and free conveyors feed this automated casting station as anode blocks are mated with rods.

Jervis B. Webb Company is a recognized leader in the field of engineered material handling systems and equipment. Our high-volume bulk conveyors bring mined ores from the mine-mouth to the aluminum refinery, using overland transport belt conveyors, automatic ship loaders and unloaders, bucket elevators, and screw conveyors.

In the smelting plant, our full line of power and free conveyors and integrated material handling products are computer controlled to efficiently automate rod/anode assembly, and green or baked anode operations.

Our product line includes:

- automated guided vehicles
- power and free conveyors
- roller and heavy-duty chain conveyors, automated storage and retrieval systems
- and custom designed automation equipment for butt removal and anode or slab handling

From raw materials handling and transport . . . to anode, molten metal, and cast ingot handling . . . to automated storage of work-in-process and finished product . . . The Jervis B. Webb Company has over 40 years of material handling and control experience in the Aluminum Industry.

JOBIN YVON/HORIBA

#558
Edison, New Jersey

Jobin Yvon/Horiba supplies a full line of GDS, Spark, and ICP optical emission spectrometers. The range of GDS instruments are capable of bulk analysis and obtaining quantitative depth profiles on both conductive and non-conductive samples. They have the ability to undertake fast, simultaneous analysis of solid samples for industrial control of Steels, Cast Iron, metal alloys, and non-conductive surface layers such as resins and ceramics. The JY GDS systems use an RF source, which has recently been recognized by ISO.

The JY Spark allows for the simple analysis of conductive metal samples. They are optimized for stability through climate control and shock resistant optics and provide low cost analysis, with a typical total analysis time less than 10 seconds and a minimum of Argon consumption (3 L/min). The instruments can either be calibrated in the factory or on-site and are supplied with easy to use, comprehensive software that features on-line monitoring of controls through the use of "Traffic light" indicators.

K

KABERT INDUSTRIES, INC.

#721
Villa Park, Illinois

Since 1960, Kabert Industries, Inc. has been furnishing the aluminum industry with casting supplies. Fiberglass cloth, an inexpensive and effective method of nonferrous molten metal distribution and filtration, is specially woven for the aluminum industry at our plant in Lynn, Indiana. Plain, leno and twill weave cloth styles are woven to specification. Three, four or six strand yarn costs are available.

Also at our Lynn facility, the cloth is cut and sewn into a variety of mini channel bags, trough socks and many other shapes. Other products available include gaskets, vacuum formed shapes, and ceramic foam filters.

KAISER ALUMINUM & CHEMICAL CORPORATION

#821 (4 SP)
Spokane, Washington

KB ALLOYS, INC.

#827, 829
Reading, Pennsylvania

KB Alloys, Inc produces Aluminum-Based Master Alloys including TIBOR®, TITAL®, and TICAR® grain refiners, binary hardeners, and special purpose alloys, including BORAL®, strontium-aluminum, strontium-boron (STOBOR®) and beryllium-aluminum. The master alloys are available in a variety of convenient-to-use forms including ingot and KORRECT BAR®. With the use of statistical process control, KB Alloys controls its processes from alloy conception through all the manufacturing steps, including raw materials, process monitoring, and product testing to on-time delivery of quality products.

This traditional quality system is now even stronger with certification of all of our facilities to ISO 9002 standard by the British Standard Institute. If consistency in product performance is important to your success, selecting KB Alloys as a vendor is your critical path to success. Our technical specialists and field sales engineers can assist you in creating the best master alloy for your needs, increasing your production, solving problems and improving the performance of your aluminum alloys.

KBM/AFFILIPS B.V.

#343
Oss, The Netherlands

KBM AFFILIPS is dedicated to the development, manufacture and marketing of specialty master alloys for the metallurgical industry. The company is backed by manufacturing facilities located in The Netherlands (KBM) and Belgium (AFFILIPS). Both KBM and AFFILIPS are fully ISO 9000 approved and offer the most complete range of master alloys for the metallurgical industry.

Products for the Aluminium industry include AlTiB, AlTiC, AlB, AlSr as well as a full range of hardeners, tablets and briquettes (a.o. Cr, Fe, Mn & Ti).

The very complete product range for the Copper industry includes products like CuB, CuCo, CuCr, CuFe, CuMg, CuSi, CuTi & CuZr. KBM AFFILIPS is also the right address for NiMg (& complex FeNiMg), additives for super alloy production as well as Pb and Zn master alloys.

For further information please visit our booth 343 or contact us at:
Tel. : + 31 - 412 - 681311
Fax. : + 31 - 412 - 635594
E-mail: info@kbmaffilips.com

KEMPE INTERNATIONAL

#930, 932, 934
Geelong, VIC, Australia

KHD HUMBOLDT WEDAG AG

#945
Cologne, Germany



KHD Humboldt Wedag AG has its main fields of activities in the design and construction of plants for the base materials industries, such as cement production, minerals processing, coal preparation and aluminium smelting.

For the aluminium industry, KHD Humboldt Wedag AG designs, supplies and installs

- bauxite crushing and grinding systems
- green anode plants
- anode handling systems
- rodding plants
- butts crushing plants
- pot line equipment

and is the world-leading supplier of vibrating compactors for forming of green anodes, cathode blocks and electrodes, with more than seventy units supplied to the aluminium and carbon products industries.

KLUWER ACADEMIC PUBLISHERS

#844
Norwell, Maine

Visit KLUWER ACADEMIC/PLENUM PUBLISHERS Booth No. 844 to browse the latest books and journals in Materials Science. Included are:

Peters/HANDBOOK OF COMPOSITES, SECOND EDITION;
Marshall/ENCYCLOPEDIA OF GEOCHEMISTRY;
Sheppard/EXTRUSION OF ALUMINUM ALLOYS;
Nicholas/JOINING PROCESSES;
Kaye/POWDER MIXING;
Hussey/LIGHT ALLOYS
DIRECTORY AND DATABOOK
and others. . .

KVAERNER PROCESS TECHNOLOGY (SWITZERLAND) AG

#242
Pratteln, Switzerland



We lead the world to supply state-of-the-art technology and equipment for the production of carbon pastes used to manufacture anodes that are consumed in primary aluminium smelting.

Our well proven technology, based on our proprietary **Buss Kneader** mixing and extrusion equipment, produces highly homogeneous anode paste from a wide variety of pitch and coke feedstock.

Our fully continuous process provides production capacities of up to 50 tonne/h in single units. Our process guarantees uniform and dependable

high-grade paste quality as a result of the application of intensive and accurately controlled shear forces during mixing. This is of the greatest importance for trouble free anode production, especially with today's high amperage smelting praxis and assists in the smooth operation of the pot rooms.

We offer the world's aluminium industry a service, which is unsurpassed with over 150 such systems in operation worldwide. Close collaboration with our international clientele and engineering partners, together with our excellent reputation provide a sound commercial basis for the supply of comprehensive engineering and plant installation services to all primary aluminium producers and other manufacturers of carbon anodes.

Besides the **Buss Kneader** equipment we manufacture and supply also continuous pitch melting plants and process technologies and proprietary equipment for the manufacturing of hydrofluoric acid and aluminium fluoride.

Our services are available worldwide and include:

- conceptual design, technical support and supply of complete working plants
- expansion, upgrading, revamps and modernisation of existing facilities
- site support during and after plant installation by experienced engineers
- spare parts supply from stock

Contact: Otto Waelyt, Tel: +41 / 61 8256 479
 Fax: +41 / 61 8256 770
 E-Mail: otto.waelyt@kvaerner.com

L

LECO CORPORATION

#644 www.leco.com
 St. Joseph, Michigan



LECO offers you **Image Analysis systems, Microindentation Hardness Testers, Metallographs** and other top quality instruments for all of your analytical and metallographic needs. Stop by our booth (#644) at the 2000 TMS Annual Meeting & Exhibition and find out how LECO Corporation can provide you with the right solutions to all of your analytical and metallographic needs. Or visit us today at www.leco.com.

For more information contact:
 LECO Corporation • 3000 Lakeview Avenue • St. Joseph, MI 49085-2396 • U.S.A.
 Phone: 616-985-5496 • Fax: 616-982-8977

(LECO is a registered trademark of LECO Corporation.)

LEM HIGH CURRENT SYSTEMS

#125
 Grove City, Ohio



Accurate measurement of electrical current is critical to the metals industry. Relatively small improvements in measurement accuracy can significantly improve process visibility. Users need this visibility to improve and optimize process efficiencies to manage ultimately reduce costs.

The **LEM LKP** system provides the most accurate dc current measurement available in ranges from 6kA to 500kA. For slightly less demanding applications such as rectifier monitoring and control the new **LEM LKAT** system is available in application specific configurations up to 80kA and is easily installed in both new and retrofit applications. To monitor the power conversion process the new **LEM RCEM** system trends the "health" of high current rectifiers over time. This enables the user to improve the effectiveness of preventative maintenance programs. It also provides assurance when using old rectifiers in capacity creep expansions. **LEM**, a global leader in electrical measurement technology, has been serving the metals industry for over thirty years and has built a global network of marketing, application, sales and service support.

LIGHT METAL AGE

#446 <http://www.lightmetalage.com>
 San Francisco, California

For over 57 years, Light Metal Age magazine has covered primary production and semi-fabrication of light metals, primarily aluminum and associated non-ferrous industries throughout the world. Circulation goes to smelters, rolling mills, extrusion plants, sheet rod and wire mills, foundries and die casting, anodizing, roll casting, coil coating and forging operations.

Recipients are executives, presidents, general managers, plant managers, technicians, metallurgists, chemists and engineers responsible for fabrication, production and operation.

LOI, INC.

#651, 653
 Canonsburg, Pennsylvania

Schmitz + Apelt LOI is well known throughout the world as a major supplier to the aluminum industry with a wide product range.

Aluminum Melting and Casting:

Delivery of complete plants for melting/recycling of various Al materials and scraps, including flue gas purification, metal treatment, charging and casting equipment.

Design and manufacture of:

- crucible furnaces
- auto ladles for gravity and die-casting

- hearth- and dry-hearth melting furnaces, stationary or tiltable
- rotary drum-type melting furnaces
- twin-chamber melting furnaces for the recycling of various scraps without salt
- casting conveyor, air-/water-cooled
- stacking equipment for ingots
- also delivery of complete stacking, marking, weighing and strapping lines.

Heat Treatment

Heat treatment plants for structural aluminum parts (wheels, cylinder heads, axle guides, etc.) for the continuous and non-continuous operation, for the process steps below:

- Solution annealing
- Quenching
- Artificial aging

Artificial aging plants for extruded aluminum sections or profiles, pressing-tool pre-heating plants, with automatic tool transport used in press shops for extruded profiles.

LOMA MACHINE MANUFACTURING

#831
 New Rochelle, New York



The state of the art billet casting operation has been designed and built by LOMA Machine of New York. The picture shows one of the LOMA "Easycast" installation at the end of a cast, with the overhead crane removing five logs from the pit. Our "Easycast" Hot Top System of aluminum was developed for the production of aluminum alloy extrusion billets. The unit is based on a closed Mold System patented, and simultaneous casting as many as over 100 multiple strands can be cast in one set-up. Less than 1 percent of the metal is lost in the form of "gate" on top of the billet, which is a great improvement compared to the scrap loss involved in conventionally cast billet.

Contact Loma by Fax at 914/636-0344
 Visit us at Booth #831

LONDON & SCANDINAVIAN METALLURGICAL CO LTD.

#425, 427
 London, England

London & Scandinavian Metallurgical and Shieldalloy Metallurgical Corporation provide grain refiners, master alloys, and hardeners to the aluminum industry. Our latest developments, TiCa1 315* grain refining rod and Ti-C-Al systems, are being used in many different applications. Stop by our booth for the latest information and how it can be used in your application.

LOUIS A. GRANT

#850
Export, Pennsylvania



Louis A. Grant, Inc. provides safe, efficient, radio controlled equipment and services for refractory and accumulations removal from all types of furnaces, melters, ladles, holders, kilns, etc. in the aluminum, copper, nickel, phosphorus, alloy and related industries. Descaling equipment and services for all types of vessels including, digesters, precipitating tanks, settlers, washers, flash tanks, blow off vessels, calciners, cokers, and similar vessels.

As the industry leader in the refractory and accumulations removal and related services we pride ourselves on our reputation to provide innovative solutions to the unique problems of our customers. Louis A. Grant, Inc. currently has equipment in seventeen countries and extensively throughout North America.

M

maerz-gautschi Industrial Furnaces Ltd.

#334, 336
Aluminium Department
Konstanzerstrasse 37
8274 Taegerwilen
Switzerland

Tel.: +41 - 71 - 666 66 66
Fax: +41 - 71 - 666 66 77
e-mail: aluminium@maerz-gautschi.ch
Taegerwilen, Switzerland



maerz-gautschi Industrial Furnaces Ltd. Aluminium Department in Tägerwilen, Switzerland, offers, as a result of the extensive experience gained in the aluminium industry world-wide, thor-

oughly developed and proven products ranging from individual items of equipment to complete casthouses. Melting and Holding Furnaces for casting directly from smelter reduction cells or integrated in remelt lines; Ingot Casting and Stacking Machines for foundry ingots, Horizontal and Vertical Casting Machines for rolling slabs and extrusion billets to produce the universal feedstock for remelt, rolled and extruded products; Heat Treatment Furnaces - batch or continuous type - for further treatment are the main products of the company. Collaboration with Technical Institutes, experienced companies such as HPI, SAG, VAW and ongoing relationships with our customers creates the inspiration for a prosperous future. maerz-gautschi's use of the latest technology provides the aluminium industry with efficient installations according to latest standards.

Contact:

D. Becker - Managing Director
Michael Hölzl - Sales Director
Rainer Ehmann - Technical Director
Oliver Jansen - Contract & Marketing Manager

MAG-CHEM INC.

#119 <http://www.magchem.com/>
Boucherville, Quebec, Canada



Specialized Casting and Sawing Lubricants

MagChem Inc. is a leader manufacturer and designer of high tech casting and sawing lubricants.

MagChem **casting** lubricants have been developed to provide the following properties:

- High flash point, low smoke formulations
- Ecological acceptance in the DC process
- High thermal stability.
- Low volatility.
- High lubricity
- Stable lubricant film at the molten metal-mold interface.
- Low oxidation properties at high temperatures.



MagChem **sawing** lubricants are critical to ensure the integrity of the surface and the quality of the cut. High heat extraction properties, elimina-

tion of staining in heat treat stages and high lubrication values are distinct advantages provided by MagChem sawing lubricants. These lubricants are formulated with anti-oxidation and lubrication additives.

MagChem has also developed a full line of quality products for aluminum wire drawing and strip rolling.

magnus@magchem.com

MASTER ALLOYS COMPANY

#347
Munster, Indiana

Master Alloys will be exhibiting its popular 100% canned hardeners. The canned hardener is 100% element in a pre-weighed, moisture-proof aluminum can. The element is not released into the aluminum until it is under the melt which negates any oxidation and results in very high recoveries.

This unique way to alloy aluminum has many advantages over other forms of hardeners. Besides being pre-weighed and moisture proof as stated above, the product is easy to store; reduces inventory; easy to use; fast dissolution; high recoveries; free from contamination; and guaranteed composition.

In addition to the can hardeners, Master Alloys supplies grain refiners and specialty alloys to the aluminum industry.

MAXON CORPORATION

#450
Muncie, Indiana



201 E. 18th St., Muncie, Indiana 47302-4124
Phone: (765) 284-3304
Fax: (765) 286-8394



During the past 80 years, Maxon Corporation has grown into a worldwide leader in the design and manufacture of industrial combustion equipment. Maxon offers two choices in their oxy-fuel burner line; the OXY-THERM® Burner and the OXY-THERM® LE. The OXY-THERM® LE Burner produces the lowest emission levels of any oxygen/fuel burner, with NO_x levels up to 70% lower than conventional oxy-gas and up to 50% lower than conventional oxy-oil. The OXY-THERM® Burner's multi-fuel capability allows for use with clean gases or any fuel oil. Maxon can build your oxygen/fuel pipe trains and control panels to complete the OXY-THERM® combustion package.

McALLISTER MILLS CO.

#451, 453, 455
Independence, Virginia



Come visit us at the TMS Annual Meeting, in Nashville! We are anxious to show the newest applications, including the ones for the Aluminum Industry, that our Maxsil CF6-2000 Ceramic Free, Needled Blanket is being used. This product may be your solution for a 100% Shot-Free, Non-Respirable and Ceramic Free Environment.

As a manufacturer of High Temperature Textiles, we will also have on display our complete line of Fiberglass Fabrics, Coated Fiberglass Fabrics, Fiberglass Tapes, Fiberglass and Quartz Sewing Threads as well as our 2000°F Resistant Silica Fabric, Bulk Fiber, Molten Metal Filters and Needled Blanket.

MECHATHERM INTERNATIONAL

#437 www.mechatherm.co.uk
Kingswinford, West Midlands, United Kingdom



Mechatherm specialise in furnaces for the aluminium industry. The product range can be split into 4 main categories:-

Foundry - melting and holding, rotary (static and tilting), scrap charging machines, vertical d.c. casting machines, turnkey foundry installations including all necessary ancillary items

Extrusion - including log heaters and shears, ageing ovens, automatic ageing oven basket handling systems and die ovens

Heat treatment - all air recirculated types of furnaces including homogenising, coil annealing, foil annealing, slab heating and solution heat treatment

Dross reclamation - joint venture with Jesse Brough Metals, custom designed to suit the type of dross to be recycled.

MEGAQUIP INDUSTRIES LTD.

#237 <http://www.megaquip.com/>
Delta, British Columbia, Canada

MEGAQUIP INDUSTRIES LTD. specializes in the design and manufacture of unique heavy duty mobile and industrial equipment utilized in Aluminium Smelters and other industries.

- Our reputation as a "Key Supplier - Partner", highlights our corporate strengths -
- The ability to define both the task and the required solution.
- The willingness to do whatever is needed for any particular design requirement.

After developing some 49 proto-types, we still hold a 100% success rate.

If you expect satisfaction through value analysis and project teams, we can assure your success - **MEGAQUIP** - part of your team!!!!

Contact info:
Email: sales@megaquip.com

METAL BULLETIN

#253 <http://www.metalbulletin.com>
London, UK

For more than 80 years, Metal Bulletin has been reaching metals producers, semi-fabricators, traders, end users, recyclers and capital equipment suppliers in more than 100 countries. Metal Bulletin and its sister publication, Metal Bulletin Monthly, are more widely known and respected in the international metals markets than any other metals publications. In addition to MB and MBM, Metal Bulletin Journals publishes numerous directories and databooks for every segment of the ferrous and non-ferrous metals industries. Metal Bulletin also arranges metals conferences throughout the world and provides an on-line metals information service, metalbulletin.com

METALLURGICAL SOCIETY OF CIM

#142 <http://www.cim.org/metsoc/>
Montreal, Quebec, CANADA



3400 de Maisonneuve W. #1210
Montreal, QC H3Z 3B8 CANADA
Phone: (514) 939-2710 Fax: (514) 939-9160

The Metallurgical Society (MetSoc) of the Canadian Institute of Mining, Metallurgy and Petroleum was formed in 1967 under the umbrella of CIM to serve the needs of all Canadian Metallurgists working to transform ores to metals and other useful commercial products. MetSoc, 1,700 strong, provides an open forum for engineers, scientists and technical personnel and students to exchange and share new knowledge. MetSoc also acts as a catalyst in enhancing the growth of its members who are engaged in all phases of the minerals, metals and materials industry.

To enhance the exchange of information MetSoc publishes a number of proceedings that touch a number of topics including:

- Hydrometallurgy of non-ferrous metals
- Light metals
- Pyrometallurgical operations, covering the smelting of sulphides and laterites
- Iron and steel developments
- Technology of zinc and lead processing
- Waste processing and environment issues
- Computer applications
- Mineral processing

MetSoc would like to take this opportunity to invite you to visit Booth 142. See you in Nashville!

METALLICS SYSTEMS

#525 <http://www.metallics.com>
Solon, Ohio



L-45CGI Compact Gas Injection Pump

Metallics Systems is a leading supplier of equipment for handling and processing non-ferrous molten metals. Metallics manufactures a complete line of molten metal pumps for circulating and degassing aluminum in reverberatory furnaces and transfer pumps for controlled, safe metal transfer. Metallics is a leader in the field of re-usable molten metal filters, machined oxidation resistant graphite, and scrap submergence systems. Metallics' state-of-the-art L-Series pumps will be displayed during the 2000 Exhibition. Metallics will also display its revolutionary Low Turbulence Scrap Submergence (LOTUSS®) melting system. See us at booth 525 and visit our web site at www.metallics.com.

MICHIGAN TECHNOLOGICAL UNIVERSITY, INSTITUTE OF MATERIALS PROCESSING

#255
Houghton, Michigan



MichiganTech

The Institute of Materials Processing at Michigan Technological University is an innovative, non-profit research facility. Our pilot plant, laboratory, analytical characterization, and testing facilities have been providing engineers and scientists with the resources to study minerals, environmental concerns and materials processing for over forty years.

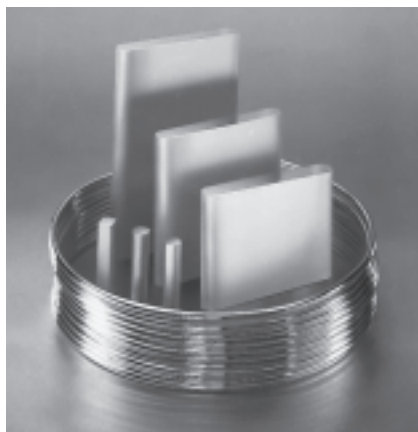
The Institute focuses on the extraction, processing, recycling, and utilization of materials and resources. We conduct sponsored technology development and research for government and industry. Materials studied include metallics, ceramics, polymers, composites, minerals, and industrial processing wastes. Expertise includes bench-top experimentation through process development, pilot plant scale-up, and commercialization. Look us up at:

MID-MOUNTAIN MATERIALS

#233, 235 www.imp.mtu.edu
Seattle, Washington

MILWARD ALLOYS, INC.

#345 www.milward.com
Lockport, New York



Milward manufactures aluminum and copper based "master alloys" for industries that melt and cast aluminum and copper metals. Master alloys are precisely calculated combinations of metal elements, occasionally with chemical additives, formed into particular alloying compounds. Milward's line of master alloys for the aluminum industry include grain refiners, modifiers, and hardeners. The Company also produces Beryl-

lium-Aluminum alloys designed to control oxidation and reduce magnesium loss. These alloys are produced utilizing an induction melting & alloying process followed by static mold or direct chill continuous casting.

MODERN METALS

#758 www.modernmetals.com
Chicago, Illinois

Modern Metals

For more than fifty years, Modern Metals has reported on the full range of metals and forming processes, reaching corporate executives, engineers and purchasing managers within the original equipment, service center and primary metal producing markets. Metalworking professionals read Modern Metals to find the most efficient and cost-effective materials and machinery, and to discover how trends in the global marketplace may affect their corporate objectives. Among metalworking magazines distributed to both service centers and OEMs, no other publication matches Modern Metals' service center circulation.

MOELLER GmbH

#949
Bonn, Germany

Klöckner-Moeller is the competent contact for power management and automation, with almost 7,000 committed employees, 23 production plants and 350 sales offices around the world.

Klöckner-Moeller develops, produces and markets LV switchgear and products, and power distribution. With our broad product range of over 35,000 individual types, we rank among the top suppliers in the electrical industry offering everything from transformers to a complete range of contactors, to circuit-breakers and the latest generation compact programmable control system. Also, our range of distribution equipment, including distribution boards and busbar trunking distribution systems, is the most comprehensive available in the European market to date. Thus, from individual components to complete plant systems, Klöckner-Moeller has the answer to virtually any customer requirement

MOLTECH

#551, 553
Carouge, Geneva, Switzerland



MOLTECH

MOLTECH Products for Aluminum Cells

In over twenty years of research, the MOLTECH Group has developed products and processes for aluminum electrowinning, includ-

ing TINOR Aluminum-wettable Protective Cathode Coating, OPANOR Anode Oxidation Protection and EXCELNOR Side Wall Oxidation Protection, which have been tested extensively in laboratories and commercial Cells and are now available for commercial use.

The ultimate goal of MOLTECH research is the development of the NOVANOR non-carbon non-consumable anode to replace carbon anodes, thereby improving Cell performance, reducing pollution in their fabrication and use, and in residue disposal.

NOVANOR anode laboratory test results are very promising and pilot scale tests are now in process. MOLTECH invites everyone to visit its stand at TMS, which will feature innovative MOLTECH products including NOVANOR.

MOLTEN METAL EQUIPMENT INNOVATIONS, INC.

#642
Middlefield, Ohio



Molten Metal Equipment Innovations, Inc is a dynamic and innovative company that designs and manufactures people-friendly equipment for the aluminum industry. Products include molten metal circulation, transfer and gas injection pumps, scrap melting systems and rotary degassers. We specialize in the ability to customize any of our products to meet our customers' unique needs. MMEI invests heavily into engineering, new products and upgrading of our existing equipment. We are fully staffed to offer a variety of services to our customers. This includes on-site installation and start-up of the initial equipment as well as continued field support

Contact us at: Telephone: 440-632-9119
Internet: <http://www.mmei-inc.com>

In Europe Contact: Pascal Gerken Europe S.A.
Telephone: 32 87 39 49 00

E-Mail: pascal.gerken@skynet.be

In Canada, contact: Molten Metal Equipment Canada, Inc. Phone: (705) 645-0002 Fax: (705) 645-8664

MURLIN CHEMICAL INC.

#842 www.murlinchemical.com
West Conshohocken, Pennsylvania

Murlin Chemical, Inc. manufactures both natural and synthetic bone ash at its plant in West Conshohocken, PA, U.S.A.. These products are supplied to the world wide non-ferrous metals industry.

Bone ash is accepted by the non-ferrous metal industry as the premier release agent. Application of bone ash to a mold, a refractory trough, a surface, or a tool, which will be exposed to molten metal, provides a consistent barrier against attack by the molten metal. Quick easy release of a casting or any solid metal that may cling to the exposed surface is a major benefit.

Plan to visit booth 842 to learn more about the

advantages gained by using bone ash.

You may contact us any time at (phone) 610-825-1165, (fax) 610-825-8659, e-mail at general@murlinchemical.com or visit our web page at www.murlinchemical.com.

N

NALCO CHEMICAL CO.

#715 (4 sp) www.nalco.com
Naperville, Illinois

The Nalco proactive approach to the primary metals industry includes products, programs and services that improve the operating efficiency and productivity of mills and facilities around the world. These programs include treatment of influent water, waste water, boiler water and cooling water. Cooling water programs provide exceptional results as well as enhance the quenchability of the water, which may impact production. To help ensure environmental compliance, programs for waste treatment, recycling and water reuse are available to effectively handle the waste water/effluent process. These programs are used in conjunction with a full line of automated real-time control and monitoring equipment. Nalco can also assist in outsourcing efforts, by developing and implementing a plan for water and waste water needs.

NASA MATERIALS SCIENCE PROGRAM

#248
Huntsville, Alabama

NATIONAL CENTER FOR MANUFACTURING SCIENCES

#951, 953 www.ncms.org
Ann Arbor, Michigan



The National Center for Manufacturing Sciences is a not-for-profit cooperative research consortium based in Ann Arbor, Mich. Founded in 1986, NCMS is widely recognized as the premier source for the performance of collaborative manufacturing R&D. The organization is backed by more than 200 corporate members in the United States and Canada, an annual project portfolio exceeding \$40 million, and an in-house staff representing a diverse array of disciplines. In the last 13 years, NCMS has formed and managed hundreds of research programs in partnership with both the public and private sectors. The cumulative value of these programs is nearly half a billion dollars.

NATIONAL REFRACTORIES & MINERALS CORP.

#820
Columbiana, Ohio

The National Refractories exhibit will highlight applications of EZ3 and FUSIO2N. EZ3 products expand the uses of the company's well known EZ Cast product line. FUSIO2N products are National's line of fused silica preformed shapes, foam blocks, castables, and cement.

EZ3 castables are a family of products designed to offer three options for installation; pouring, gunning, and pumping. The unique materials can be installed by mixing and pouring into place without vibration. They can be mixed and pumped some distance to a form. Best of all, they can now be gunned with standard swing-valve pumping equipment.

FUSIO2N preformed shapes are pure fused silica. A unique production process allows National to be very cost competitive while offering customized materials and shapes to meet customers needs.

NKM

#744
Rotterdam, Holland

NKM and the Aluminium Industry

NKM products have found their way around the world since 1933. Ore transport installations exported to Beire, floating cranes to India and Turkey, custom designed loading- and transport installations to New Zealand, India, Hong Kong and Portugal, salt reclaimers to the United States, concrete loaders to Venezuela and since 1963 specially designed cranes and machines for aluminium reduction plants. Hundreds of these cranes and machines have now been installed worldwide.

Over the years, NKM has constantly upgraded and improved its equipment for the aluminium industry. Besides crane transfer systems NKM supplies the aluminium industry with cathode cranes, baking furnace cranes, pot tending cranes, jacking frames, anode stacking cranes, crucible cleaning machines, pipe cleaning machines, pre-heaters and refractory heaters, billet handling cranes and casthouse cranes. See us at booth 744, or phone or fax NKM in Holland: tel. +31 10 4873462 fax +31 10 4873478

Noell Crane & Service, Inc.

#143
Herndon, Virginia



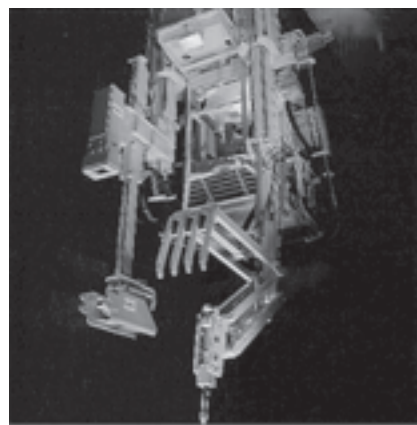
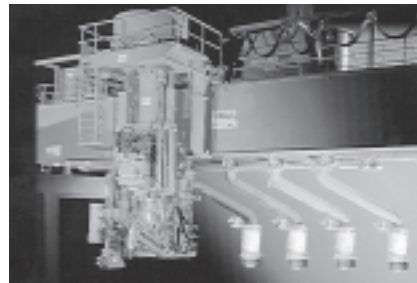
Products

- Pot Tending Cranes
- Cathode Removal Cranes
- General Purpose Cranes
- Crane Transfer Gantries
- Anode Jacking Frames
- Anode Clamps and J-hooks
- Roof filling Spouts
- Retractable Bumpers

Crane Runway Sectional Raising Beams
Carbon Baking Furnace Tending Cranes

Services

Field Erection Supervision and Commissioning
Lump Sum Field Erection and Commissioning
Maintenance Contracts



NORTH AMERICAN MANUFACTURING

#646, 648
Cleveland, Ohio

North American Manufacturing is a solution provider for combustion and process control systems. The company produces and sells combustion hardware as well as complete systems including installation drawings and complete control systems where applicable.

North American has been providing systems for the aluminum industry for better than forty years, specializing in energy savings and melt rate optimization.

NORTH AMERICAN REFRACTORIES COMPANY

#921, 923 www.narco.co
Cleveland, Ohio



The North American Refractories Co. exhibit will highlight applications of our unique ALCLearn porous refractory plugs for increasing melt rate,

removing sodium from primary aluminum, decreasing hydrogen concentrations and eliminating thermal stratification in the furnace. NARCO will also highlight our ARMORKAST and Zircon product lines with their ability to resist aluminum and corundum in severe environments.

O

OPSIS INC.

#136
San Marcos, California

Opsis Inc. is the North American supplier of Open Path Monitoring systems for air quality monitoring, continuous emissions monitoring (CEM) and process control. The ultraviolet DOAS technology, developed by Opsis, has received international approvals and provides customers with reliable system solutions for a number of applications. All systems feature dynamic calibration capability and simple hardware configurations. The ambient system is an EPA approved equivalent method for SO₂, NO₂ and O₃.

Other Opsis benefits include complete DOAS system packages, fully automatic monitoring systems, multi gas and multi path systems, fast, continuous measurements, modular construction which allows expanding or updating of existing installations and simple report generations.

Applications for Opsis equipment include Trend Monitoring, Air Quality Monitoring at street level, Fence Line Monitoring of fugitive emissions, Monitoring Background Levels, Measurement of Aircraft emissions, Waste Incinerations, Power Plants, Mineral Wool Production, Cement Industry, Chemical Industries, Sulfuric Acid Production, Fertilizer Production and Aluminum Smelters.

P

PC+O M RAADTS

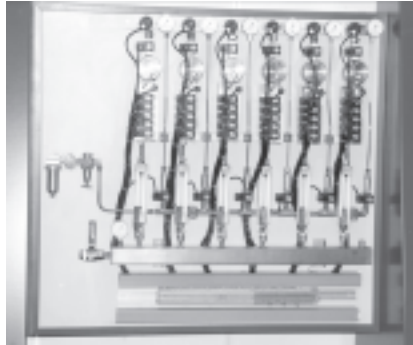
#252
Rees, Germany
Tel. (Germany) +49 - 2851-2763
Fax. +49 - 2851-2784
e-mail: pco-raadts@t-online.de
PCO - Purging COnrol systems
homepage: www.pco-raadts.de

PCO is:

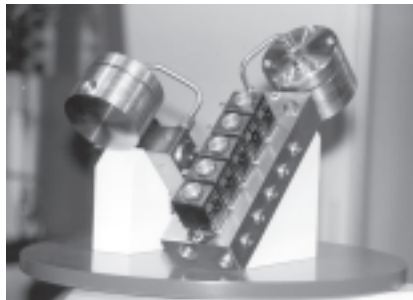
- excellent for operations such as pre-melting, melting, fluxing, cleaning, temperature equalising, homogenisation and auto bursting
- simple to operate, manually or automatically
- controls every consumer (porous plug, impeller, lance pipe) individually, irrelevant of their numbers
- guarantees a homogeneous and constant flow rate (volume and time), independent of any variation in back-pressure of each consumer
- operates through predetermined and pre-selected programs with regard to flow rate, time and production process
- allows individual flow rate for any individual consumer at the same time
- automatically sets free a by-pass operation

in order to blow-free any afflicted individual consumer after P-Max has been reached (as a result of a clogging)

- shuts down without delay and automatically when chlorine alarm has been set by chlorine detector
- flushes automatically the total system free of any residual mixed Cl / N or Ar gas in the case of an emergency
- an almost maintenance free system
- possesses redundant and built in alarm systems
- guarantees highest safety for its users
- a very robust, long life built product
- reduces tab - to - tab - time
- a highly efficient and reliable product at a reasonable price



Distribution panel 6 lines



Dosing modules manual & electric

PARKER-HANNIFIN

#349, 351
Des Plaines, Illinois

PECHINEY GROUP

#725, 727, 729
Mamareonek, New York



With an annual alumina production of nearly 2 Mt. and aluminium production of 1 Mt., Pechiney is one of the major producers.

The Aluminium Pechiney Technology has always been very innovative and has set many records, particularly for power consumption, cathode performances and environmental protection (more than 2800 AP 18 cells and 2,000 AP-30 cells are operated around the world).

Pechiney Aluminium Engineering markets the Pechiney Group's Technologies for casthouse equipment. They are specialists in the areas of degassing and filtration, including its recently improved Alpur TS system, automatic DC cast-

ers and continuous strip casters using the Jumbo 3C process. They are also suppliers of technical assistance in the manufacture of flat-rolled aluminium products, for rolling and finishing or basic engineering, and operating know-how for turn key plants.

PLIBRICO

#234, 236
Chicago, Illinois www.plibrico-usa.com



Plibrico Company celebrates its 85th year as an American owned and operated manufacturer and installer of monolithic refractories. Plibrico's product line is composed of a wide range of plastics, castables and maintenance materials that can be installed through various methods, such as our patented HyRate and mini-HyRate plastic gunning, pumping, Plishot, gunniting, etc. Stop by our booth to discuss how Plibrico's experience and "state of the art" consistent products, along with your local area representative can successfully solve your refractory problems in a timely fashion.

POCO GRAPHITE INC.

#117
Decatur, Texas www.poco.com

Poco Graphite is a manufacturer of specialty graphites and silicon carbides. Capabilities include post synthesis modifications such as purification, densification, impregnations and surface treatments to produce materials designed for specific conditions and applications.

POCO produces complete solutions to applications problems. Highly technical materials are turned into finished products with the aid of design engineers and a complete machining facility.

At TMS, POCO will display graphite and silicon carbide parts for a variety of applications. Featured product will be curved slat heater elements. These graphite elements are gaining popularity with furnace manufacturers as a replacement for graphite bar elements. For more information, visit POCO's web site www.poco.com or call 877-762-6747.

PORT OF LONGVIEW

#561
Longview, Washington

Port of Longview, Washington USA
- THE PERFECT LOCATION -
180-acre Industrial Park and
Terminal Facilities and Services on the
Columbia River

Port Facilities: The Port of Longview's import and export terminal facilities on the Columbia River in Washington state are capable of handling your bulk and breakbulk moves to and from the Pacific Northwest. Longview specializes in bulk handling with an emphasis on chemicals, minerals and fertilizers and breakbulk commodities such as steel.

Industrial Park: The Port's 180-acre industrial park is the perfect location for expanding iron, aluminum and steel manufacturers and processors requiring excellent transportation connections. Dual rail service and tax advantages in General Purpose Foreign Trade Zone #120 offer companies a competitive edge.

PRECISION INC.

#833
Sisterville, West Virginia

THE PRIMARY ALUMINUM INDUSTRY'S MOST REMARKABLE SUPPLIER

Precision, Inc. is a 40-year old supplier of quality goods and services to the primary aluminum smelting industry.

- Electrical Bus
- Copper Fabrication
- Aluminum Fabrication
- Steel Fabrication
- Design
- Material Handling & Logistics Support

PREMELT SYSTEMS

#530, 532
Kalamazoo, Michigan

PREMELT is the foremost supplier of total metal scrap cleaning and processing systems worldwide. PREMELT'S patented, innovative metal processing equipment and techniques result in unprecedented operational efficiencies and cost reductions. Annual metal cost savings of 10% or more are common in most PREMELT Systems. Engineering and supplying light metal scrap processing, cleaning, drying and furnace charging systems for the metals industry since 1981.

PREMIER REFRACTORIES AND CHEMICALS, INC.

#815 (4 sp)
St. Louis, Missouri
<http://www.premierref.com/>

Premier Refractories supplies products for many applications within the Aluminum Industry. We have materials for use in Melting and Holding Furnaces and Die Cast Furnaces. Also available are materials for Crucibles, Troughs, Launderers and Runners, Anode Bake Furnace and Electrolytic Reduction Cells.

Flexible Refractory Design Options

We offer a full range of castable, mortar, plastic and ceramic fiber products designed to meet every type of aluminum application. Products are

available in various consistencies to allow for any customer preference or installation technique. These include ramming, casting, gunning, pumping, troweling, and preformed shape installation.

ALUGARD(r) Non-Wetting Refractories for Molten Metal Contact

ALUGARD(r) products contain a patented Aluminum Resistant additive which gives them exceptional resistance to wetting by molten aluminum alloys. This results in longer refractory life, cleaner alloys and lower cost. A wide variety of refractory products are offered in the ALUGARD(r) series.

Refractory Installation Services

Premier offers extensive project management capabilities, including highly trained and qualified personnel who can install and/or maintain today's wide variety of refractory systems.

PROCEDAIR INDUSTRIES

#335 (4 sp) www.procedair.com
Montreal, Quebec, Canada

PRYOR GIGGEY CO.

#448 www.pryorgiggey.com
Chehalis, Washington



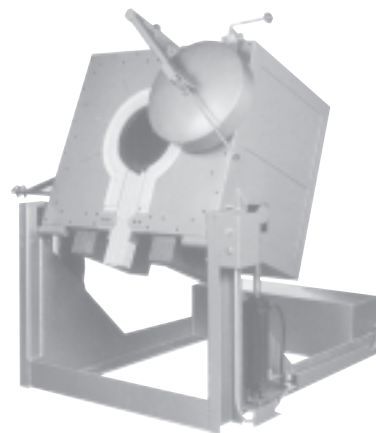
Pryor Giggey celebrates its 52nd anniversary in 2000. We have been providing refractory products to the industry with unparalleled customer service and refractory innovation throughout our history. We have a long customer list of satisfied customers in the aluminum and copper producing industries and continue to strive for better performance and lower refractory cost to the customer. We are the exclusive licensee of Lafarge Refractaire Monolithiques for North America, which provides us with the state of the art in monolithic technology for solving customer demands in problem applications and severe service conditions. We are the first producer to offer true self flow technology and to provide successful veneer repairs. We have now introduced the most recent innovation in refractory installation—High density gunning—the low cost repair alternative to shotcrete. When you have a problem application and want the first team to help solve your refractory needs, give us a call at 1-800-4-HOTROX (800-446-8769) or stop by our booth at the TMS exhibition, #448.

PYRADIA INC.

#452, 454 www.pyradia.com
Longueuil, Quebec, Canada

PYRADIA is a fully integrated manufacturing and engineering corporation, which offers custom-built equipment. We have developed a full line of aluminium heat treating furnaces in different configurations. We manufacture melting furnaces, drop quench furnaces, pyrolysis furnaces,

tempering furnaces, annealing furnaces and ovens. We also offer many other types of ovens and furnaces. PYRADIA can design equipment responding to your specific requirements. Shown here is a melting furnace.



PYROTEK, INC.

#414 (16sp) www.pyrotek-inc.com
Spokane, Washington

Pyrotek

Pyrotek offers a wide variety of refractory materials, providing trowling solutions from the furnace to the casting pit. Pyrotek's AR Precast trough sections offer a long life solution for transfer trowling. INSURAL has been added to the castable product line, providing solutions for billet casters who need low thermal loss refractories for distribution trowling.

Pyrotek also offers a complete range of metal degassing equipment. The HD-2000 holder degassing equipment is the latest in holder treatment technology, offering dramatic reduction in chlorine. SNIF degassing systems offer the latest in sealed technology to minimize dross formation, reducing maintenance and operating costs.

R

R&D CARBON LTD

#524 www.rd-carbon.com
Zurich, Switzerland

R&D Carbon Ltd. serves the petroleum coke, pitch and aluminum industries.

Research and Development: Basic research is carried out to better understand relationships between raw material properties and process parameters.

Technical Services: Raw material evaluations for anodes, cathodes, and other carbon products are performed in bench or pilot plant scale. Technology audits and in-plant process optimisation

are carried out at customer's plants.

Laboratory Test Equipment: Easily operated and reliable test instruments have set world-wide standards for testing carbon products.

Bake Furnace Process Control: An integrated bake furnace firing and process control system guarantees high productivity, low energy consumption and consistent anode quality.

Training: Special training courses in the basics of anode manufacture are offered in our training centre or at customer's location.

Engineering: A new process for green anode manufacturing allows the reduction in investment and operating cost. In cooperation with leading engineering companies our patented anode technology is marketed worldwide.

REFTECH

#115
Morris, Alabama

REX ROTO CORPORATION

#915 (4 sp) www.rexroto.com
Fowlerville, Michigan

Rex Roto Corporation is a leading world-wide supplier of refractory for the light metals industry. Our products and services include:

- Pyroform refractory for hot-top billet casting systems and ingot distribution pans
- High Performance Metal Delivery Systems from furnace to casting station
- Electric heaters for launder systems and filter bowls
- Thimbles, inserts, joint and patch compounds and other consumables

Rex Roto Corporation has a team of Engineers, Designers, and Metallurgists to aid in the complete design of your Metal Delivery System. Come visit us in Booth #915 to discuss your application.

S

SAINT GOBAIN INDUSTRIAL CERAMICS, INC.

#835, 837 www.sgicref.com
Worcester, Massachusetts

The Metallurgy Department of the High Performance Refractories business, a division of Saint-Gobain Industrial Ceramics, Inc., will exhibit at the 2000 TMS Annual Meeting Exhibition. The Metallurgy Department's Non-Ferrous Metals Group representing the former Norton Company, Carborundum Company and Savoie Refractaires non-ferrous metal businesses will exhibit in the booth.

Saint-Gobain Industrial Ceramics, Inc., provides refractories for molten metal containment and other critical metal contact applications. Refractory products for the aluminum industry include reduction cell sidewall bricks and blocks, melting/holding furnace ramp and hearth bricks, castables and mortars, immersion heater and thermocouple protection tubes for degassing equipment. High Performance Refractories also supplies specialty and proprietary materials for

critical areas in filter systems, molten metal pumps, troughs and dry vibration cements for coreless induction melting/holding furnaces.

High Performance Refractories' products for the copper industry include shaft furnace liners, bricks, burner components, associated mortars and ramming cements, low moisture/high strength castables for launders, spoons and other critical metal contact applications.

SCHARF WESTFALIA Industrial Systems GmbH

#936
Lunen, Germany

S C H A R F W E S T F A L I A

The SWS Scharf Westfalia GmbH (SWS) was established in 1972, emerged from the former Gewerkschaft Eisenhütte Westfalia, later Westfalia Lünen and finally Westfalia Becorit.

Since 1995 SWS is fully owned by Deutsche Bergbau - Technik GmbH (German mining-technology) (DBT). DBT is a 100 % subsidiary of RAG Ruhr Kohle AG.

The company is located in Germany in the cities of Lünen, head office (North Rhine Westphalia) and Uelzen (Lower Saxony)

Scharf Westfalia designs, develops, manufactures, and supplies turn key plants and systems as well as components for the Aluminium Industry.

The Aluminium division is responsible, amongst others, for state-of-the-art turn key Anode Rodding Shops, Anode Handling and Storage, as well Butt and Bath Treatment Plants for the Aluminium Industry.

The following systems are presenting our main product line:

Turn key plants, as well as individual equipments, for:

- Anode Rodding Shops
- Cleaning and handling of bath and butt material
- Baked and green anode handling and storage systems
- Cooling tunnel for anode butts and bath material
- Crucible cleaning
- Fully automated transport system for green and baked anodes
- Anode traverse beam for the handling of anodes in the electrolyte cell

SECO/WARWICK

#828 <http://www.secowarwick.com>
Meadville, Pennsylvania



Celebrating 100 years of Heat Processing Solutions, SECO/WARWICK will display information on Werner Company, who recently installed their second SECO/WARWICK log homogenizing furnace. The new unit works in conjunction with Werner's existing homogenizer manufactured in

1969 by SECO/WARWICK. The original furnace was the first reversing crossflow furnace utilized in the aluminum industry. The new system employs innovations in both load cooling and process controls.

The Aluminum Team specializes in systems for non-ferrous Ingot Preheating, Coil/Foil Annealing, Rod/Wire Annealing, Log Homogenizing, Solution Heat Treat, and Molten Metals. SECO/WARWICK is poised for the next century of innovation. . . let us create a solution for you.

LMI SELCOM

#948, 950 www.laserpour.com
Southfield, Michigan

LMI Selcom

MEASUREMENT & CONTROL

LaserPour® molten metal level control solutions

The LaserPour® Aluminum Level Control Systems from LMI Selcom are high-speed, closed-loop control systems that automatically and precisely regulate the level of molten metal in a mold, launder, headbox or tundish.

Using real-time level measurements, the systems control the metal level from start-up through the filling stage to finished casting. Metal flow from the tilting or stationary furnace is also controlled to assure accurate and consistent fill rate to the desired level.

LMI Selcom's products for aluminum level control provides automatic, easy-to-use, reliable and virtually maintenance free solutions and they offer proven benefits to the customer.

SELEE CORPORATION

#215 (8 sp) www.porvair.com/seleefr.htm
Hendersonville, North Carolina

SELEE Corporation is the premier manufacturer of ceramic foam filters for use in the ferrous and non-ferrous metals industries.

SELEE Corporation is THE ONLY CERAMIC FOAM FILTER AND REFRACTORIES SUPPLIER IN THE WORLD TO ACHIEVE ISO 9001, QS-9000 AND FORD Q1 QUALITY CERTIFICATIONS. This means SELEE Corporation will deliver to you on time the best quality products in the industry.

SELEE has maintained the market and technical leadership for the ceramic foam industry by developing strong partnerships with customers. These partnerships allow customers to share SELEE resources to satisfy their quality and profitability goals.

A partnership with SELEE provides our customers access to these resources:

- Full Range of Ceramic Foam Filters
- Advance Engineered Filter Bowls, Preheat Systems and Refractories
- Commitment to Innovative New Products
- Applications Engineering Team
- Fully Equipped Metallurgical Lab
- Dedicated Customer Service Team
- Global Direct Sales Force and Distribution Network

- R&D Pilot Plant Facility for:
- Rapid Prototyping
- Innovative New Product Development
- TQM Programs that Provide:
- Continuous Improvement
- Full Product Certification
- * Self-Directed Work Teams
- * On-Site Customer Training Programs



SENTECH CORPORATION

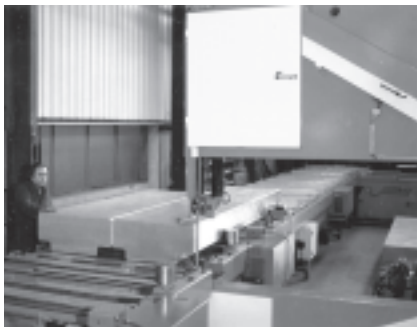
#218, 220
Tempe, Arizona



Sentech Corporation has been in business for more than 15 years. We produce a variety of capacitance based, non-contact, metal level measurement sensors. These sensors are designed to work in mold, headbox, launder and similar level control applications. Additionally, we produce actuators that can be used to control the flow of metal from stationary furnaces, along troughs, or into ingot molds. Our electronic MTS300 rack system allows our sensors and actuators to be integrated together and controlled from a single operator interface. Our MTS300 rack can operate as a stand-alone control system with internal PID loop functions or it can easily interface with customer PLC equipment to provide fast, reliable, metal level control.

SERMAS AS

#229
Saint Quentin Sur Isere, France



SERMAS INDUSTRIE is a customer oriented company specializing in design, construction and commissioning of machines for the aluminium industry:

Complete sawing systems for slabs, T-bars and billets including:

- Band Saw (cut rate up to 1100 sq. in/min)
- Chips suction system
- Handling equipment (downenders, conveyors, stop positioner, crops evacuation, etc.)
- Packaging equipment (scale, stamping, ink marking stacking, strapping, etc.)

Typical output:

- One cut T-bar every 57 seconds
- One slab (cut at both ends) every 8 minutes
- Ladle skimming and cleaning machines
- Cathodes machines
- Anode machines (cooling tunnel, handling systems and rodding show equipment)

Your contact at SERMAS:
Jean-Christophe Garcin
Tel: 33 4 76 7 42 42
Fax: 33 4 76 93 67 76
Email: sermas@sermas.com

SHIELDALLOY METALLURGICAL CORP.

#425, 427
Newfield, New Jersey

Shieldalloy Metallurgical Corporation provides Grain Refiners, Master Alloys and Hardeners to the aluminium industry. Over the last 25 years, we have introduced innovative products aimed at reduced cost in the cast house. Our latest development, TiCAI 315™ grain refining rod (Al - 3% Ti - 0.15% C), is being used in many different applications. In addition, our cost effective Sr-Al QuickSol Bar and Ti-B-Al QuickSol Bar have been successfully introduced in many applications where aluminum alloys are cast in foundries as well as DC cast shapes. We also produce a wide range of hardeners containing Chrome, Manganese, Iron, Nickel, and Titanium in our flagship ALTAB products. QuickSol Bar and ALTAB offer precision in today's quality environment.

SILVER NEEDLE, INC.

#465, 564
Kellogg, Idaho
<http://www.nidlink.com/~silndl/main.html>

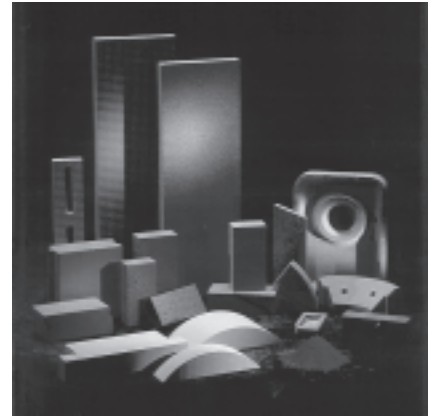
Our company started in a foundry: 13 years working and producing safe yet comfortable clothing. We listen because we know the frustrations of not being understood, of wearing clothing that doesn't fit, rubs, scratches and confines. Give us the opportunity to work for you and see if Silver Needle can make a difference.

WE ARE YOUR SOURCE FOR:

- Technical briefs: Discover which fabric will protect the best
- MSDS for fabrics
- Test kits: Determine which fabric works best. Do your tests on site!
- Design requirements
- Information Central - Call our toll free number: 1-800-863-7733

SKAMOL A/S

#731, 733 www.skamol.com
Nykobing Mors, Denmark



Superior Insulating Performance

Being in the market for more than 80 years, Skamol A/S is one of the world's leading manufacturers and suppliers of thermal insulation to the aluminium industry. One of our specialties is the manufacture of pot-sets customized to fit individual cell designs. We offer a wide range of thermal insulating products for service temperatures up to 1150°C (2102°F). The Skamol product range includes MOLER insulating bricks, ISOPERLOR Perlite insulating bricks and blocks, V-LITE insulating bricks, SKAMOLEX Calcium Silicate slab insulation, SKAMOLEX vermiculite slabs and special shapes.

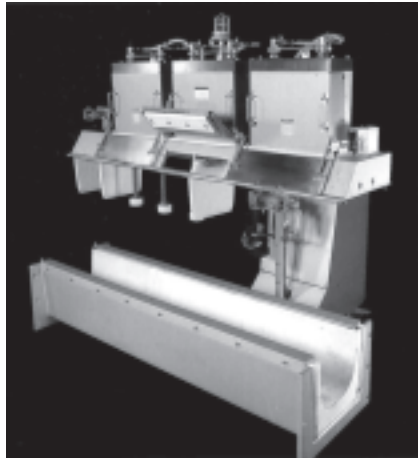
At the coming TMS Show in Nashville, Skamol will have an open workshop demonstrating the Hot Disk Method for measuring thermal conductivity. Visitors are invited to bring samples of their current insulation material for small scale testing.

S.T.A.S. LTD

#225, 227 <http://www.stas-unigec.com>
Chicoutimi, Quebec, Canada



SOCIÉTÉ des TECHNOLOGIES de
L'ALUMINIUM S.T.A.S. LTÉE



LA SOCIÉTÉ DES TECHNOLOGIES DE L'ALUMINIUM S.T.A.S. LTÉE

STAS is a dynamic and entrepreneurial company specialising in the commercialisation of new technologically advanced equipment. Industry sectors include aluminium and mines serving a global market place on a custom-made basis through the service of representatives in the Americas, Europe, Asia, Australia and Africa.

STAS is located in Quebec, Canada. World-class R&D facilities provide a continuing flow of new equipment to be commercialised; they include the Alcan R&D Centre, the Noranda Technological Centre and the Hydro-Québec Research Centre at Shawinigan.

STAS is a recognised leader in its innovative abilities to develop and fabricate sophisticated equipment which lower costs for its customers as well as improving quality - using the latest in programmable automation controls. Examples include compact degassing equipment, rotary injectors, dross coolers, filters, crucible cleaners, automatic guidance systems, etc.

STELLAR MATERIALS, INC.

#754 www.stlr.com
Northville, Michigan

Thermbond is a unique new refractory material with features and benefits unavailable in traditional refractories. Thermbond is completely and naturally non-wetting to aluminum-with no additives to burn out. Thermbond bonds permanently to other refractories. Existing linings may be veneered and repaired with Thermbond. Thermbond may be cast, troweled, gunned or hot-gunned for permanent repairs or new linings.

T

TECHMO CAR SPA

#548, 550 www.techmo.it
Limena, Padova, Italy

Since the date of its birth in 1961, TECHMO has devoted itself to the solution of the problems connected with the Aluminium Industry. Among some of the most significant machines produced by TECHMO we can mention the Anode Changer, the Self Powered Crust Breaker, the Tapping Truck and the Screw Feeding System for Alumina, Fluoride and Bath Feeders and Transporters. All of these machines propose new, original and economical solutions to the Aluminium industry, always struggling with safety, pollution and costs. TECHMO'S technological proposals, besides increasing plants' productivity, aim at improving working conditions inside the potroom.

TEXSEM LABORATORIES

#749 <http://www.tsl-oim.com/>
Provo, Utah



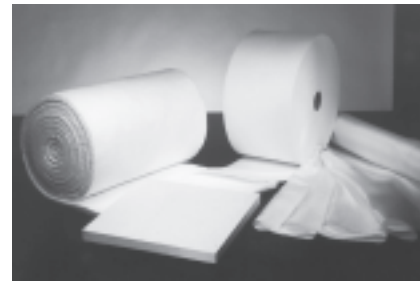
TexSEM Laboratories (TSL) supplies microanalytical systems and services for the SEM and TEM. Based on electron backscatter diffraction in the SEM, TSL's OIM and Delphi products provide microtexture mapping, grain boundary profiles, and phase identification of polycrystalline samples. Using a patented combination of dark field imaging and beam rotation TSL's Automated Crystallography for the TEM (ACT) produces grain boundary maps and grain size statistics for nanocrystalline thin films within minutes.

TSL is a subsidiary of EDAX, Inc. which is the world leader in the design and manufacturing of energy dispersive x-ray analysis systems.

TexSEM Laboratories, Inc
a subsidiary of EDAX, Inc.
392 East 12300 South, Suite H
Draper, Utah 84020
(801) 495-2750
Fax: (801) 495-2758
Sales@tsl-oim.com
www.tsl-oim.com

THERMAL CERAMICS & THERMIC REFRACTORIES

#325 (6 sp) www.thermalceramics.com
Augusta, Georgia



Thermal Ceramics, a worldwide leader in refractory and high-temperature insulation technology, offers solutions for the most demanding thermal management challenges. Products include:

Refractories and Structural Insulation Products
Castables
Insulating Firebrick and Mortars
Firebrick
Refractory Fired Shapes
Structural Insulation
Insulating Products
Bulk Ceramic Fibers
Blanket/Strip Products
FireMaster Fire Protection Systems
Kao-Tex Textiles
Kao wool and RPC Boards and Shapes
Microporous Insulation
Millboard
Paper and Felt Products
Specialty Products
Superwool 607
Weld-On and Veneering Modules

Thermal Systems America

#114, 1116 www.thermalsystemsamerica.com
Canastota, New York



Thermal Systems America has successfully manufactured drop-in precast refractory liners for aluminum induction melters. One liner, installed into a 10,000 lbs. melter at one location, has melted well over 21 million pounds of aluminum. The liner is fitted with a lifting grab for crane placement inside the furnace. Removal of the Thermal Systems America spent precast refractory liner is also easier and quicker.

Thermatex/Wahl Refractories

#849, 851
Fremont, Ohio

Thermcon Ovens BV

#643
Geldermalsen, The Netherlands

Melting and holding furnaces for aluminium designed and built by Thermcon are in wide spread use with major aluminium producers around the world. In recent years D.C. casting machines and homogenizing furnaces have been added to the delivery program making Thermcon an all-round supplier for turn key casthouse packages. Recycling of aluminium scrap has been a priority with Thermcon for many years, hence the development of side well furnaces with integrated incinerators, enclosed charging systems and delacquering and preheating installations in operation with clients such as V.A.W., Daiki in Japan.

Thermcon will give an update on the latest furnace technology available and developments underway to meet the requirements of the future, both with respect to improved economics and compliance with environmental regulations.

Thorpe Technologies

#443 (4 SP)
Whittier, California

Thorpe Technologies Inc., a professional engineering organization, focuses exclusively on the design, development, engineering, and construction of industrial furnaces, delacquering systems, thermal oxidizers, and related thermal technology.

Aluminum product line includes:

- Apros-based technology delacquering systems
- Rectangular Melting Furnaces
- Sidewall Melting Furnaces
- Dry Hearth Melting Furnaces
- Round Top Charge Melting Furnaces
- Tilting Melting Furnaces
- Rotary Melting Furnaces
- Stationary Holding Furnaces
- Tilting Holding Furnaces
- Batch Homogenizing Furnaces
- Continuous Homogenizing Furnaces

Thorpe Technologies Inc. is headquartered in Whittier, CA; Tel: (562) 903-8230 with a branch office serving the eastern United States located in Gulf Shores, AL; Tel: (334) 968-6211.

U

Unifrax Corporation-Fibers Division

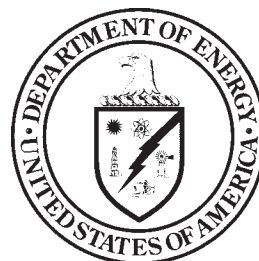
#935, 937 www.unifrax.com
Niagara Falls, New York

Unifrax Corporation is one of the leading producers of high performance, heat-management materials used by many industries in a diverse group of applications.

Unifrax is committed to solving industrial insulating problems and providing exceptional value to its customers. This commitment is evident in the company's investment in advanced process technology, its state-of-the-art manufacturing facilities, its extensive research and development activities, and its continual focus on quality in the broad range of products and services it offers. Fiberfrax insulating products are available in more than 50 product forms. They have traditionally been used in heat vessels in the production and processing of ferrous and non-ferrous metals, industrial chemicals, petroleum products, power generation, and ceramic, glass, and other industries employing process temperatures up to 3000 degrees Fahrenheit (1650 degrees Celsius). Unifrax will exhibit Insulfrax Specialty Glass Fiber at the upcoming TMS show in Nashville. Insulfrax Specialty Glass Fiber is an evolutionary breakthrough in insulating materials, resulting in a product with a wide range of applications in the primary metals and metals processing industries and possessing superior thermal and mechanical properties.

US Department of Energy/ Office of Industrial Technologies

#931, 933 www.oit.doe.gov
Washington, DC



The U.S. Department of Energy's Office of Industrial Technologies (DOE-OIT) has formed partnerships with the most energy intensive U.S. industries to accelerate the development of energy efficient technologies and processes. The DOE partnership with the Aluminum Industry will be highlighted. The DOE-OIT Aluminum Partnership funds R&D to address the research needs of the Aluminum industry as identified in the Aluminum Industry Technology Roadmap. The Aluminum Partnership supports and enhances the global competitiveness and ecological sustainability of the U.S. aluminum industry through strategic, leveraged investments in technologies that save energy, improve productivity, and reduce waste.

V

VAW Aluminium-Technologie GmbH

#947
Bonn, Germany



VAW Aluminum Technologie GmbH (VAW-ATG), a subsidiary of VAW Aluminum AG, is specialized in tailor-made modernization projects for aluminum smelters. The core competencies of VAW-ATG comprise process modeling, process control and data acquisition/data processing, aluminum and carbon technology, casthouse technology and technical engineering.

The improved version of our Electrolysis Automation System ELAS 2 will be presented. Owing to its new design and improved functions, this process control system for aluminum reduction cells comes in a much smaller, more compact housing and is easier to integrate into existing automation environments. ELAS 2 incorporates a central windows-oriented information system which allows the easy retrieval of all relevant process and production data. The whole range of VAW-ATG's process control know-how will be presented, including training and simulation tools.

Vesuvius Hi-Tech Ceramics

#824, 826
Buffalo, New York

W

WAGSTAFF, INC.

#515 (12 sp) <http://www.wagstaff.com>
 Spokane, Washington

Wagstaff, Incorporated, Spokane, WA USA is a 53 year old company known worldwide for manufacturing equipment for aluminum DC casting of semi-fabricated rolling ingot and extrusion billet.

Wagstaff customers, located in over 45 countries around the world, have long known the benefits of high quality **Wagstaff MaxiCast Hot Top Billet Casting Tables** equipped with the **Wagstaff AirSlip Air Casting Process**. Also known for it's leading technology in **Wagstaff ShurCast Casting Machines**, **Wagstaff AutoCast Automated Casting Control System**, and **Wagstaff LHC Low Head Composite Casting System**.

Wagstaff innovations are invented, first built and tested in it's expansive, triple casting pit, Research and Development facility located on the same property as the manufacturing facility.

WESTERN INDUSTRIAL CERAMICS

#442 <http://www.wicinc.com/>
 Tualatin, Oregon

Z

ZIRCAR PRODUCTS

#120, 122 www.zircar.com
 Florida, New York



ZIRCAR Products, Inc. Is a manufacturer and international marketer of a wide range of fibrous ceramic thermal, structural and electrical insulation products. Several products are produced for use as castertips and caster nozzles for continuous casting of aluminum strip and plate including low density boards and high strength reinforced composites. Rigid and flexible products are available in compositions of zirconia, alumina, alumina-silica, silica and others. Product densities range from 4 pcf to 130 pcf. Standard and custom configurations produced. See our complete catalogue on the internet at www.zircar.com.

ZYP COATINGS INC.

#127 <http://www.zypcoatings.com>
 Oak Ridge, Tennessee



ZYP(r) Coatings, Inc., the premier manufacturer of paintable boron nitride coatings, highlights three types of coatings for Wagstaff billet casters. Tableguard (easy-to-see, BLUE-COLORED) greatly extends casting-table refractory life, while giving inclusion-free pours, stopping dross buildup, and allowing easy removal of any mispours. Transition Plate Coating (TPC) products have been developed as the best, nonreactive coatings for this application. Ring-Seal is a totally nonwetting seal for transition-plate/graphite-ring joins.

ZYP Coatings provides true, **total nonwetting** coatings for all areas of processing molten non-ferrous metals. Boron Nitride Lubriccoat (WHITE or new, very-visible BLUE-COLORED) is ideal for extending the life of refractory troughs, launders, runners — while providing smooth flowing action. Boron Nitride Releasecoat gives Teflon®- like mold release and mirror-like (cosmetic) surface finishes for low-draft, high-drag areas in permanent molds. Boron Nitride Hardcoat is ideal for ladles, skimmers — making them last longer and perform better with the hard, boron nitride coating.