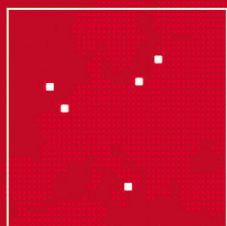


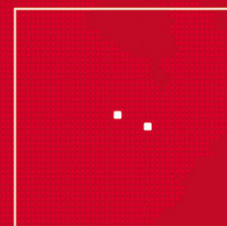
○ GLOBAL ALLIANCE



DISA (DENMARK)
DANTHERM (GERMANY)
MARBO ITALIA (ITALY)
PANGBORN (ITALY)
SAINT GOBAIN (FRANCE)
OMEGA (ENGLAND)



ABC HQ
ASK Chemicals Korea Ltd. (KOREA)
JFS (JAPAN)
KOYAMA (JAPAN)
TOYODENKA (JAPAN)
ABC ZHANGJIAGANG (CHINA)
SHONGHA TRADING SHANGHAI (CHINA)
TEMIC (TAIWAN)
SHANXI ABC SOLUTION (CHINA)



SIMPSON (USA)
ASK Chemicals Korea Ltd. (USA)



ABC INDUSTRIES

www.abcsangsa.com

HEAD OFFICE | 1023-56 Bancheon-ri, Eonyang-eup, Ulju-gun, Ulsan-si **Tel.** 052-255-9000(代) **Fax.** 052-255-9090
SEOUL OFFICE | #701 Family Bldg., 67-8 Imhak-dong, Gyeonggi-do, Incheon **Tel.** 032-543-5637-8 **Fax.** 032-543-5639



ABC Industries



30
years
and counting

ABC Industries, based on the customer's trust,
will build a green environment for the customer.



Message from the CEO

ABC Industries is a company specialized at mold materials and dust collector systems realizing green environment based on various experiences and technologies.

Over last thirty years, our executives and staff members have made a commitment to the development of the national molding industry. ABC Industries is doing its best to contribute to the modernization of the national molding plant and technologies by building a close relationship with the world best molding companies such as DISA group, starting being an exclusive agent for the U.S Ashland Chemical in 1981 to graft overseas new technologies onto the molding industry in Korea. In addition, thanks to many peoples who gave us their support and assistance, we could make many successful cases. With our company philosophy of customer satisfaction, we are making our endeavor to contribute to the technological modernization of the molding plant and energy saving and also we introduced and settled Ashland Process and FRC Process which do not use thermal energy.

Meanwhile, we have developed a dust collector with advanced technology under the technical partnership with Dantherm Filtration, Germany to improve the environment of casting factory, and we contributed to improving environment of molding plant.

Our officers and employees will take a partial role of developing domestic industries from total engineering casting to wind power and DPF industries, and strive to be developed with customers in this rapidly changing globalization era. Moreover, we will become a company which goes all lengths by developing new and advanced technology for the purpose of customer satisfaction and environment improvement.

Please give us your support and encouragement.

ABC Industries
CEO Choi Jae Young

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30 years and counting

ABC Industries is a company
that challenges to new possibilities
through continuous innovation



ABC History

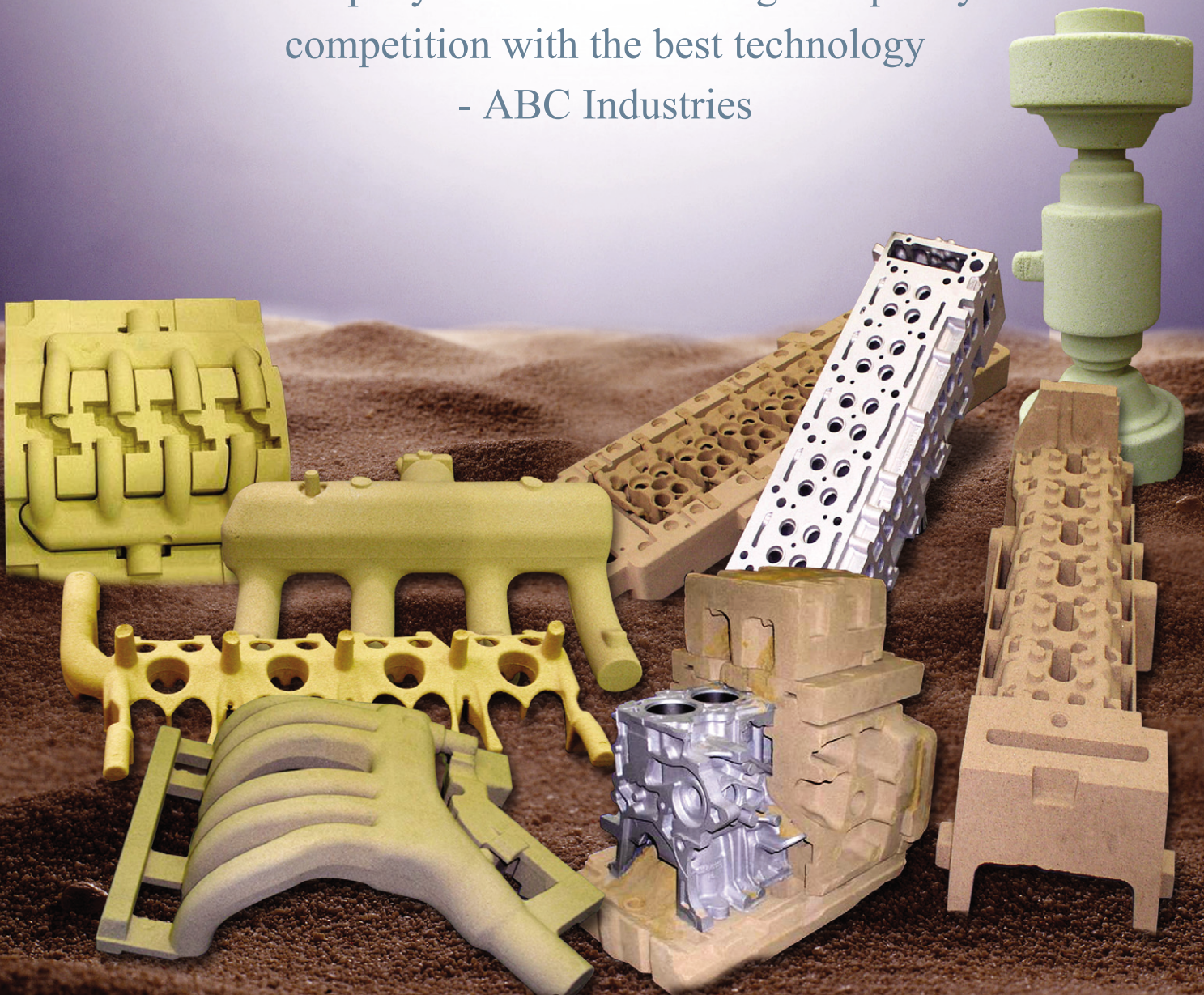
- 1981. 05. 20 Establishment of ABC Corporation
- 1982. 01. 25 Contract with Ashland Chemical Co., for an exclusive agent in Korea
- 1985. 07. 25 Establishment of ABC Company.,Ltd.
- 1988. 01. 29 Establishment of a joint venture of Ashland Korea Foundry Products., Ltd.
- 1993. 12. 29 Obtain approval for foreign investment increase (2.419 billion won increase)
- 1994. 03. 04 Entered into technology license agreement with U.S.A Ashland
Entered into product usage and patent right usage agreement
- 1994. 05. 06 Completion of construction of Ashland Korea Chemical Co., Ltd.
and commenced mass production
- 1994. 10. 15 Entered into technical partnership agreement with
Germany Dantherm Filtration (Dust Collector)
- 1996. 01. 04 Agency contract with DISA
- 2002. 05. 01 Agency contract with Saint-Gobain Advanced Ceramics Hamilton
- 2004. 03. 02 Establishment of ABC Machinery(Zhangjiagang) Co., Ltd in China
- 2006. 11. 21 Establishment of Shanxi ABC Solution Machinery Co.,Ltd in China
- 2007. 08. 14 Establishment of Songhe Trade Co., Ltd in China
- 2009. 05. 10 Agency contract with the UK OMEGA (self-hardening property line)
- 2010. 02. 01 Completion of ABC Industries' new headquarters building (Based in Ulsan)
- 2010. 02. 01 Establishment of DPF Division
- 2010. 02. 01 Establishment of Wind Power Division
- 2010. 09. 01 Establishment of Valvoline Division

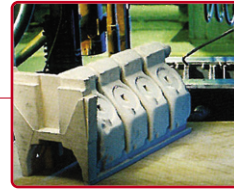


Materials Division

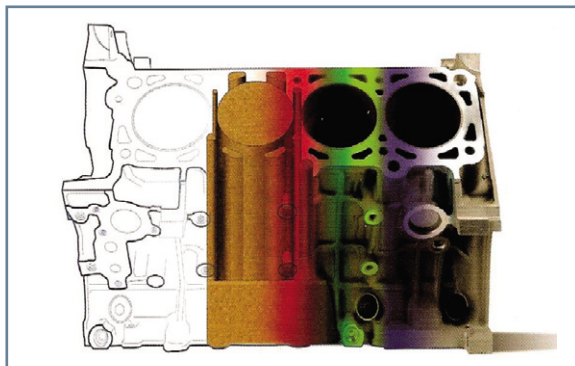
Cold box binder like ISOCURE greatly improves the productivity of molding plant, decreases scraps, enhances the quality of casting and saves energy costs. ABC Industries provides continuous technical support to customers for the initial stage of development and application of COLD BOX PROCESS.

A company that ensures the highest quality
competition with the best technology
- ABC Industries





○ COLD BOX | BINDER SYSTEM



1. ISOCURE PROCESS

- With cold box of PolyUrethane reaction, use DMEA(DiMethylAmine) as catalysis agent to produce Part1(R-OH) and Part2(R-NCO) reaction. Quick hardening core-making.
- Supply customized resin to satisfy various customers needs with most widely used cold box process.

2. ISOSET PROCESS

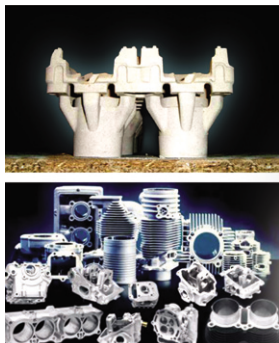
- With cold box of Polyacrylate Epoxy reaction, use SO₂ gas catalysis agent to produce Part1(Epoxy+CHP) and Part2(Epoxy+Acrylic) reaction. It is quick hardening core production.
 - Bench life of more than one week
 - No nitrogen defect because it does not contain nitrogen
 - Excellent flowability makes super strength feature.

3. ISOMAX PROCESS

- With cold box of Polyacrylate Epoxy Urethane reaction, use DMEA, TEA catalysis agent to produce Part1(Epoxy+CHP) and Part2(R-NCO+Acrylic). It is quick hardening, nozzle core production.

- Bench life of more than four hours
- Less possibility of nitrogen defect because it contains little nitrogen
- High strength with excellent flowability
- Easily applicable to the current COLD BOX M/C

○ INORGANIC BINDER SYSTEM



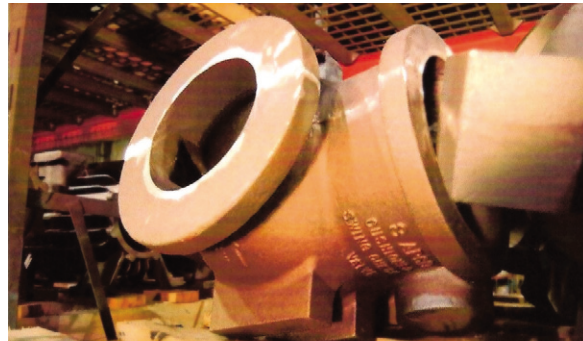
- Environmental-friendly binder system
- No VOC' s
- Flammable materials excluded
- Phenol, formaldehyde, No nitrogen
- No odor when core making, Pouring and shake-out
- Significantly reduce gas emissions

○ NO-BAKE BINDER SYSTEM

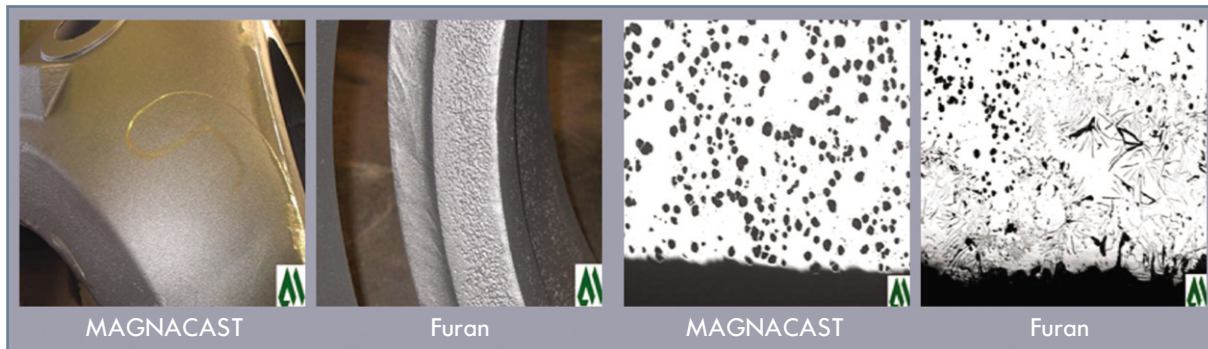
1. MAGNASET PROCESS

This is a new acid curing system which compensates problems of existing Furan Process. It has been developed for the purpose of improving productivity, environment and zero defects.

- Improved productivity: More than 20% of rapid curing response. If productivity is same, it saves the amount of using catalyst.
- Environmental-friendly:
Zero phenol / Zero formaldehyde
- Decreasing defects: Decrease defects by using lower amount of hardener or low sulfur hardener.



MAGNASET[®]
Foundry Binder



2. Chem-Rez

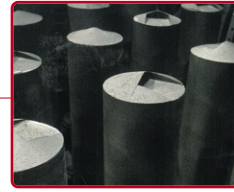
- Furan Process for general cast iron and cast steel
- Available to choose level suitable to the products of customer

3. PEPSET PROCESS

- PepSet Process has been introduced in 1970. It is currently used by most small and medium molding plants as a mold and core-making process. This is a rapid curing, self-hardening property process. It is also suitable for semi-automatic no bake line for high production.
- Dimensionally accurate and the resistance against corrosion at mold or core is high.
- The density of filling is high due to good flowability.
- Since the speed of hardening can be freely adjusted, the productivity is high.

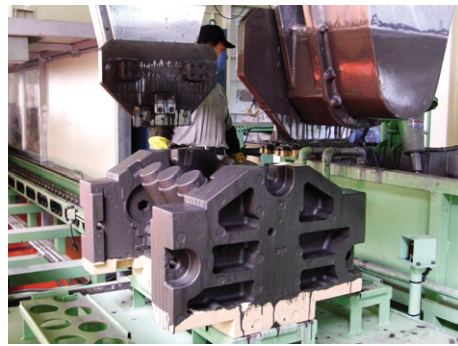
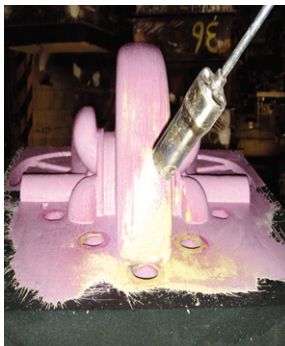


Materials Division



| Coating |

- Apply water base coating to domestic furan and other no-bake Mold & Core.
- Apply multiple water base coating for Cold box & Shell core.
- Develop localized Coating through Ashland technology and apply Coating customized to company.
- Color Changeable coating : The color of Coating is changed according to the drying status.



| Filter |

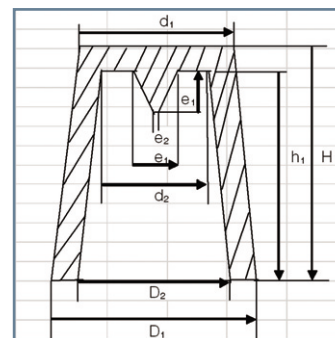
- Ceramic round hole filter.
- It has excellent cold and hot strength, excellent melt inclusion filtering effect and turbulence decreasing effect.



| Sleeve |

- Measurement precision insulating/exothermic sleeve with Cold Box method

Type	H	h ₁	d ₁	d ₂	D ₁	D ₂	e ₁	e ₂
4/7	71	62	58	35	62	42	14	2
4/8(S)	75.5	67	61.7	39	67	47	14	2
5/8	80	70	70	48	74	51	16	3
6/9	92	78	75	52	80	56	18	3
6/10	117	103	75	56	80	64	18	3
MX	108	95	85	60	96	70.6	22	4

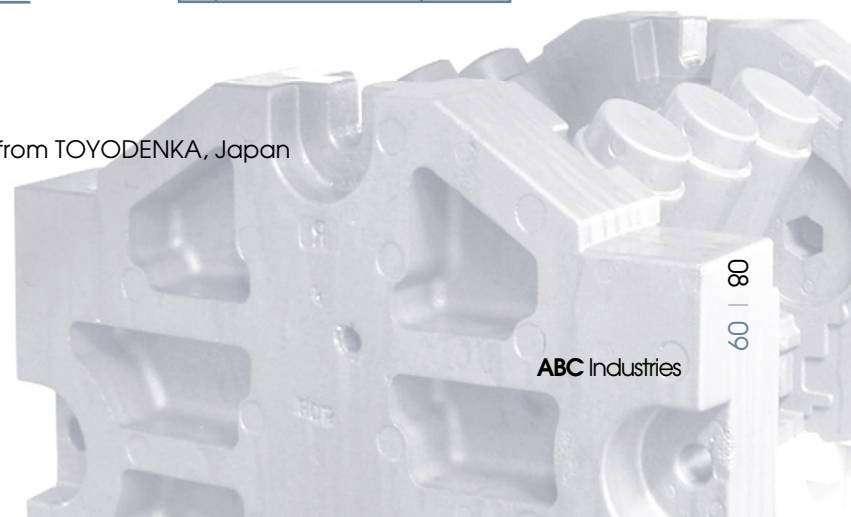


| TOYODENKA |

- Brought nodulariser and inoculants with stable quality from TOYODENKA, Japan

| Slux (abc life) |

- Slux to remove slag in melt



Environmental Division

| ABC Customer service |

Sufficient know-how and various experiences

Experience to supply high-efficient dust collectors whose excellence has proved in the market.

Retain high-efficient/energy saving dust collector and tornado hood know-how

Engineering and consulting

Review environmental factors when newly installing/expanding production line, and provide efficient dust collection solution

Provide economically efficient investment method according to the degree of deterioration of the existing facilities

Manufacture

Design and manufacture the dust collector body

Design and manufacture the dust tornado hood and capture hood dedicated to melting furnace

After service

Customer service responsible for customers using ABC products (Visit, inspect and report system)



ABC Industries is
opening the world with dream and future
through eco-friendly business



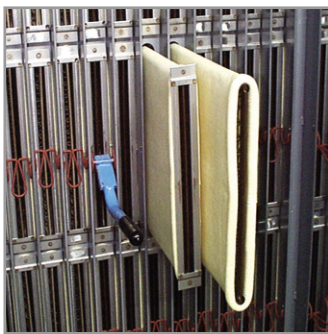
○ DUST COLLECTOR |

REVERSE PULSING HIGH-EFFICIENT DUST COLLECTOR

Adopt a Cassette Type Reverse Air System Dust Collector for the first time in Korea under a technical partnership with Danttherm Filtration, Germany which is a dust collector company ac knowledged throughout the world.

| Danttherm Filtration Dust Collector |

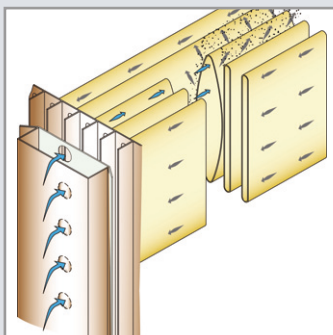
- Downflow dust collection Technology
- Cassette-type bag Filter
- Energy saving system
- Available to install in smaller space
- Low Noise blower : <85dB(A)
- Low cost and easy maintenance
- Guarantee : Emission concentration <10mg/m³
Filter Life : 2years



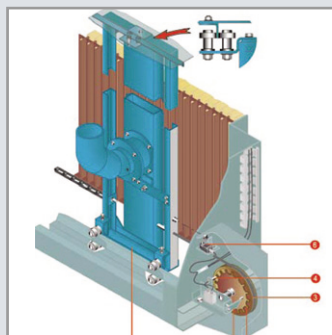
Cassette Type Filter



| ENERGY SAVING FILTER |



FS Filters



○ DUST COLLECTOR INSTALLATION VIEW



| Application of casting facilities |

- Capture more than 99% fume if tornado hood is used
- Power cost savings and optimized dust collector system by adjusting wind amount for each process with motor operating damper
- Fully meet the emission standard 10mg/m³
- Special engineering for holding furnace that are difficult to apply
- Good capture and remove fume gas when ductile is applied.



| Other applications |

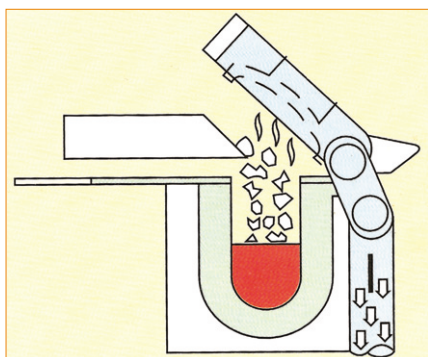
- Engineering calculating the optimal air flow
- Engineering preventing water condensation
- Engineering for fire prevention
- Engineering using dry & warm air



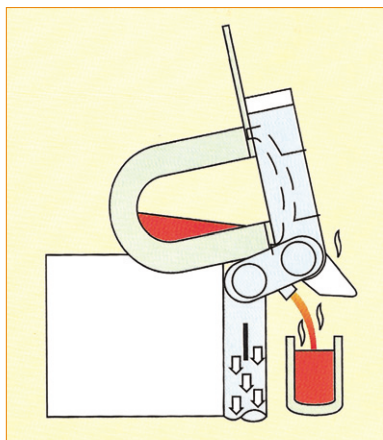
○ TORNADO HOOD

- > New Design for operator's convenience
- > Good performance
- > 2 Hydraulic cylinders move the hood
- > Easy Control for Air Volume by automatic damper

| Charging |



| Pouring |



Wind Energy Division

: Blades

| Why Ashland for Wind Energy Solution |

Key of wind turbine system _ **Blades**

Key of blade composition _ **Resin**

Key of resin performance _ **Derakane**

New material development project for large-scale marine wind power plant towers
_ **Now it is carrying out the national research task (USA)**

ABC Industries toward endless
creativity and challenge to be one of the
global companies.





○ ASHLAND WIND TURBINE SOLUTIONS

| Blades |

- Derakane® and Aropol® resins
- Maxguard® and Enguard® gelcoats
- Enguard and Pliogrip® bonding pastes and adhesives

| Gear box |

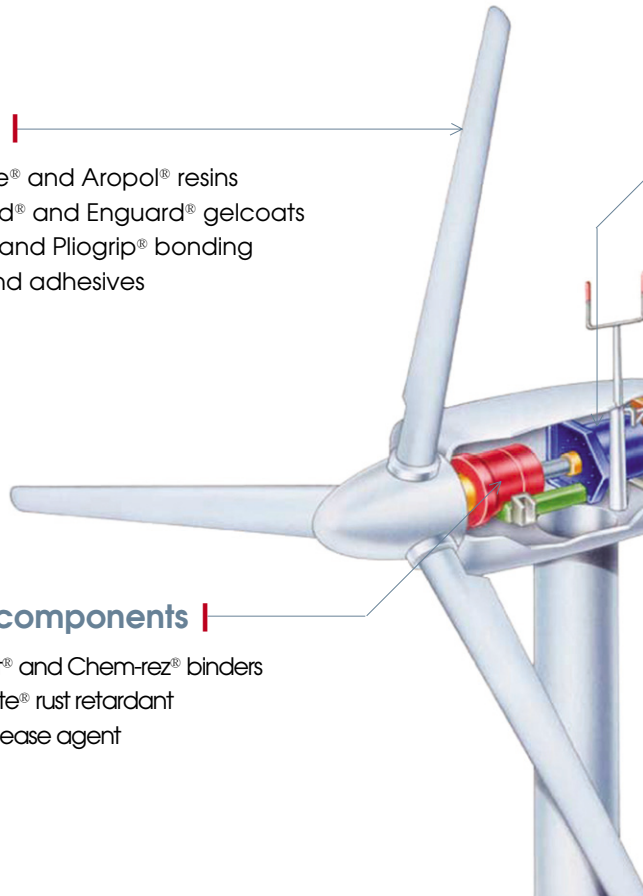
- Valvoline® gear oil and lubricants

| Metal components |

- Magnaset® and Chem-rez® binders
- Magnakote® rust retardant
- Zip-slip® release agent

| Nacelles |

- Aropol resins
- Enguard gelcoat
- Envirez® bio-based resins



○ ASHLAND Composite Solutions For Blades

Outer gelcoat



Assembly:
bonding paste &
structural adhesives

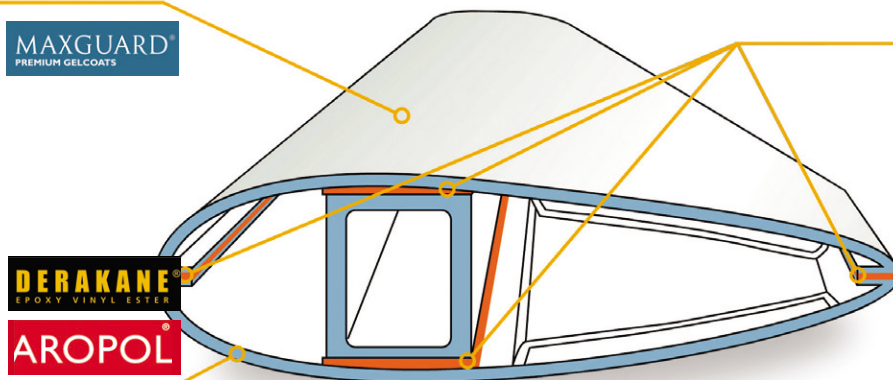
ENGUARD®

PLIOGRIP®



AROPOL®

Resin system



○ DERA KANE 601-200 RESIN

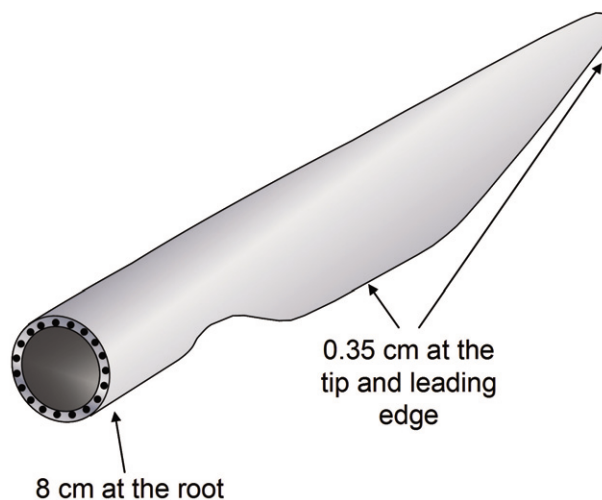
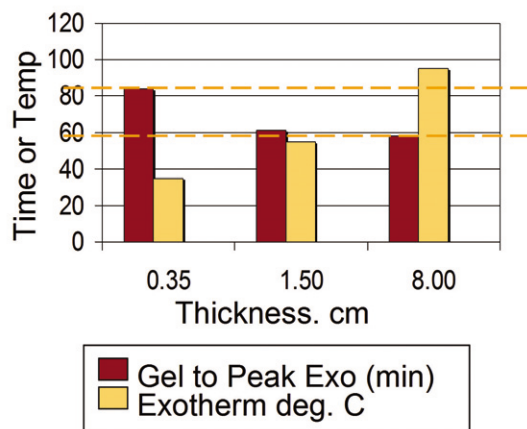


| Advantages |

- Germanischer Lloyd Approved
- Lower cost than epoxy
- Faster cycle time
- Ambient temperature cure
- Epoxy vinyl ester resin with low styrene content that has an optimized backbone, resulting in excellent mechanical properties and corrosion resistance performance
- Cure technology for low linear shrinkage (Ashland only technology)
- Good processing properties as good as epoxy

| Processing : Thermal Characteristics |

- Nature of cure is critical to quality assurance - Fewer defects
- Desirable cure properties from thick to thin cross-sections
 - Moderate infused laminate peak exotherm
 - Small difference for cure time from thick to thin sections



Wind Energy Division



AROPOL



| Aropol G300 : Unsaturated Polyester Resin |

- Easy handling and high productivity
- No post cure, cure at room temperature
- High mechanical performance
- More than 95% market share in UPR blade market in china
- More than 50% market share in Nacelle and Hub cover market in china

| Gel Coat : Maxguard |

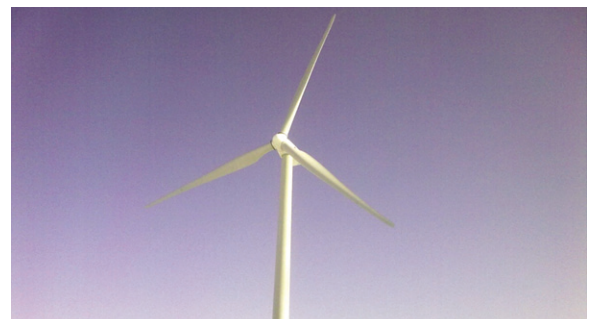
- Proven technology for the wind blade industry
- Spray and Brush Applications
- Ashland's Patented Low Emission(LE) technology
- Comply with the Hazardous Air Pollutant(HAP)
- Low VOC and MACT requirement
- Good transfer efficiency and easy application
- Apply good weathering and mechanical properties



| Bonding Paste : BP 6200 |

- Bonding paste to Vinyl Ester Resin
- Fast curing at Room temperature
- Good performance test at -45°C

| Case Study : Derakane |



Machinery Division

DISA Foundry Equipment

DISA is the world's leading total supplier to the foundry industry

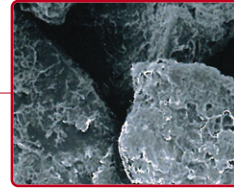
Key features

- Unbeatable uptime
- High capacity with unmatched speed of 510m/h
- Excellent castings with mismatch of max 0.10mm
- Fast installation and easy maintenance
- Safer and quieter working environment
- Access to DISA worldwide Service Support



DISA SAM Mixer

It will grow to the world first company specialized at machines and equipments.



OMEGA | SPARTAN SERIES

FOUNDRY MACHINERY LTD



Spartan Series key benefits include :

- Excellent access to mixing chamber
- Increased mixer capacity
- Extremely robust design
- 3-100 tonnes per hour capacity

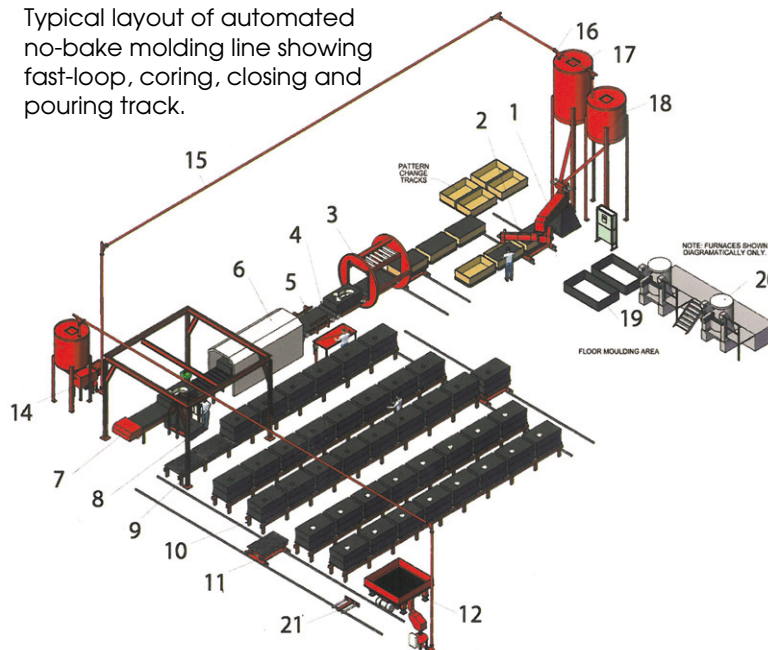


Spartan 303P 3TPH

MOULD HANDLING | FAST LOOP

FOR LARGE SIZE MOLDS WITH VARYING FILL TIMES

Typical layout of automated no-bake molding line showing fast-loop, coring, closing and pouring track.



01. Mixer
02. Fast Loop Assembly
03. Rollover Unit
04. Reset Station
05. Tilt Coat Unit
06. Slat Conveyor & Drying Tunnel
07. Coring & Closing Conveyor
08. X-Y Manipulator Gantry + Manipulator
09. Pallet Return Tracks
10. Casting & Cooling Tracks
11. Powered Transfer Car
12. Gamma Major + Hot Sand Blowing
13. Receiving Silo
14. New Sand Feed
15. Pneumatic Conveying Line
16. Diverter Valve
17. Reclaimed Sand Silo
18. New Sand Silo
19. Floor Moulding Area
20. Furnaces
21. Wipe-off Unit

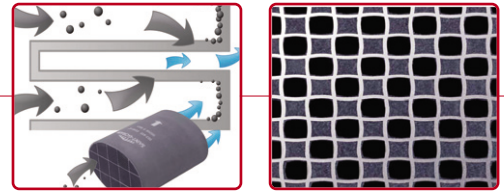
DPF Division

CERACLEAN



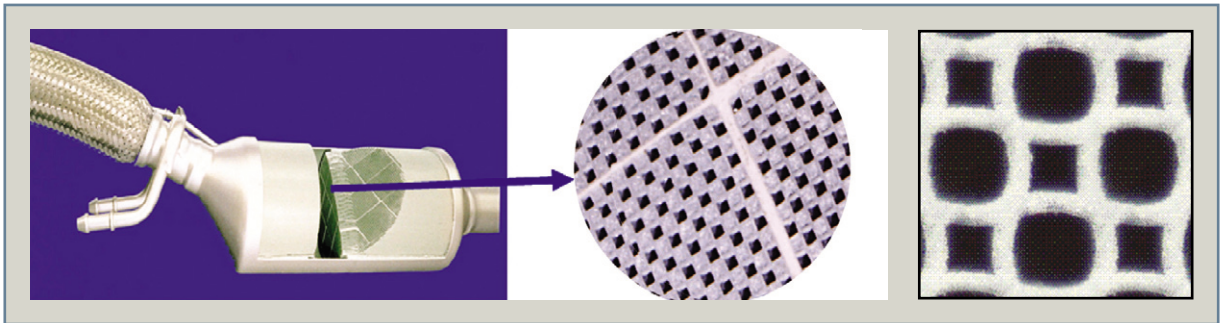
Diesel Particulate Filter
from Saint-Gobain
Innovation for a cleaner future

ABC Industries is a company that challenges to
new possibilities through continuous innovation.



○ DPF | DIESEL EMISSION FILTER (R-SiC)

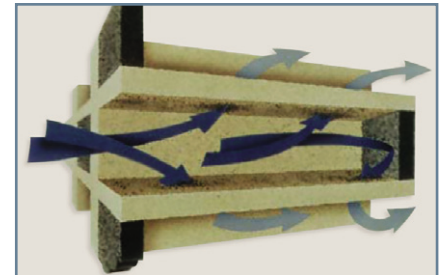
Porous materials with the optimized porosity(P%, D50)



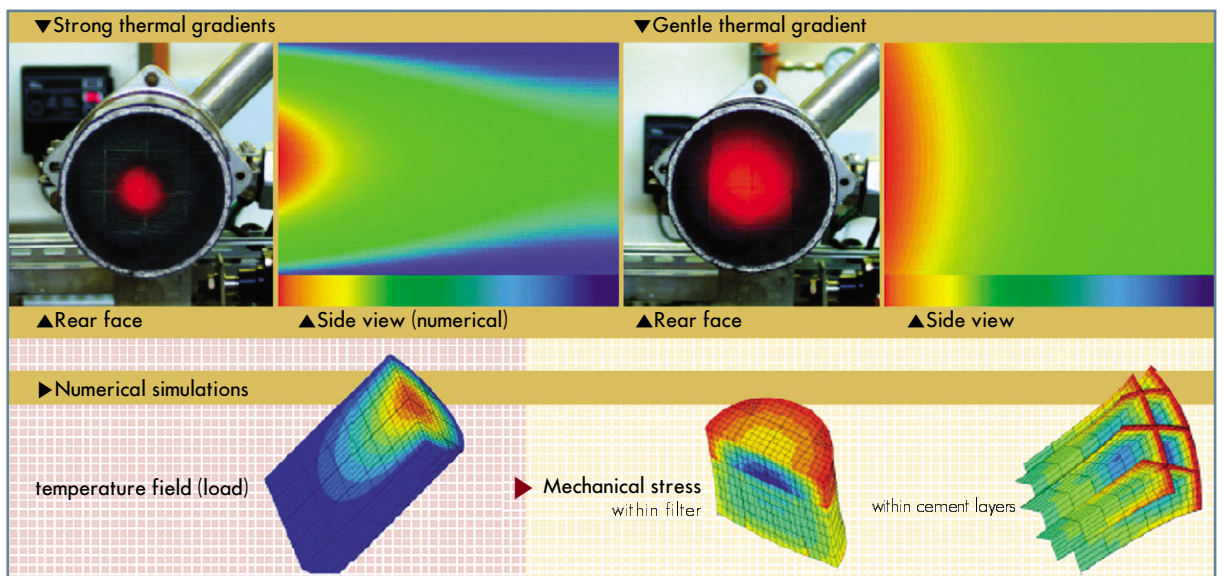
| Saint Gobain DPF Key Points |

- Direct manufacturing and supplying of DPF raw materials(SiC)
- Even catalysis coating by even organization structure
- Guarantee long life with R-SiC materials' high strength and stability to chemicals
- Reduce fuel consumption with Wavy design
 - The best MSL => Longer recycling period
 - Minimize the effect of ash settling
 - Realization of filter downsizing

| Soot Capture |



| The best thermal conductivity |



Valvoline Division



○ A History of Innovation

- First semi-synthetic motor oil
- First and only brand for high mileages
- Leader in services innovation
- First Nano - appearance products







○ Valvoline Professional Series





○ Valvoline Complete Offering

	Products / Services	Brands
Lubricants 	Motor Oil - Gasoline and HD Diesel Engine Automatic Transmission Fluid Gear Oil Greases	Valvoline Premium Blue All Fleet Plus MaxLife
Chemicals 	Fuel Additives Power Steering Fluid Brake Fluid Parts Cleaners Oil & Diesel Fuel Additives	Valvoline Professional Series MaxLife SynPower Pyroil
Appearance 	Wheel Cleaners Tire Dressing / Shine Waxes / Polishes Car Wash Degreasers	Eagle One (Consumer) Car Brite (Professional)
Antifreeze 	Green Coolant Heavy Duty Pre-Charge Heavy Duty Extended Life Hybrid Technology Coolant Chemicals Cooling System Flush	Zerex

○ Product Development

- Valvoline's alliance with Cummins, Eaton and other OEM's give us access to the latest technology for product development.
- Valvoline has many OEM relationships which include:
 - Cummins
 - Caterpillar
 - Detroit Diesel
 - Kawasaki
 - Eaton
 - Komatsu
 - Mack / Volvo
 - JCB

China Factory



○ Global Network

+ ZHANGJIAGANG FACTORY

- COMPANY NAME _ ABC MACHINERY (ZHANGJIAGANG) CO.,LTD.
- ADDRESS _ KOREA INDUSTRIAL PARK, FENGHUANG TOWN,ZHANGJIAGANG CITY, JIANGSU PROVINCE, CHINA
- TEL _ 512+5842+1995 FAX _ 512+5842+1598
- PRODUCTS _ NOZZLE CORE(CORE), SLEEVE

+ SHANXI FACTORY

- COMPANY NAME _ SHANXI ABC SOLUTION MACHINERY CO.,LTD.
- ADDRESS _ HEJIN FOUNDRY INDUSTRY ZONE, HEJIN CITY, YUNCHENG SHANXI
- TEL _ 359+528+8262
- PRODUCTS _ NOZZLE CORE(CORE), POWDER COATING



www.abcsangsa.com



+ SONGHE TRADE

- COMPANY NAME _ SONGHE TRADE (SHANGHAI) CO.,LTD.
- ADDRESS _ 1101, PUDONG SOUTH STREET, PUDONG NEW DISTRICT. SHANGHAI, CHINA
- TEL _ 21+83+9076 FAX _ 21+583+59077
- BUSINESS TYPE _ TRADE