

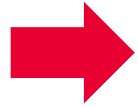


THE NEW DOW

4° CONFERENZA NAZIONALE POLIURETANO ESPANSO RIGIDO

Roma, 10 Ottobre 2019

Seek**Together**™



About Dow

- Global Manufacturing Footprint
- Industrial Intermediates and Infrastructures



Dow in Italy

- Production Facilities



Dow Polyurethanes

- Correggio Polyurethane Innovation Center
- Insulation **Science** – V PLUS **Perform**TM



Dow Performance Silicones

- VORASURFTM Polyurethane Additives
- Rigid PUA Solutions

ABOUT DOW

Corporate Stats¹

- 2018 Pro Forma Op. EBITDA of **\$9.1B**
- 2018 Pro Forma Op. EBIT of **\$6.2B**
- 2018 Pro Forma Net Sales of **\$49.7B**
- **113** manufacturing sites in **31** countries
- Serving customers in **~160** countries



DOW

OUR AMBITION

To become the most innovative, customer-centric, inclusive and sustainable materials company in the world

OUR GOAL

Profitable growth & best-in-class performance

OUR CORE VALUES

Integrity
Respect for people
Protecting our planet

GLOBAL MANUFACTURING FOOTPRINT

U.S. & CANADA

36 locations
2 countries

EUROPE, MIDDLE EAST, AFRICA AND INDIA (EMEI)

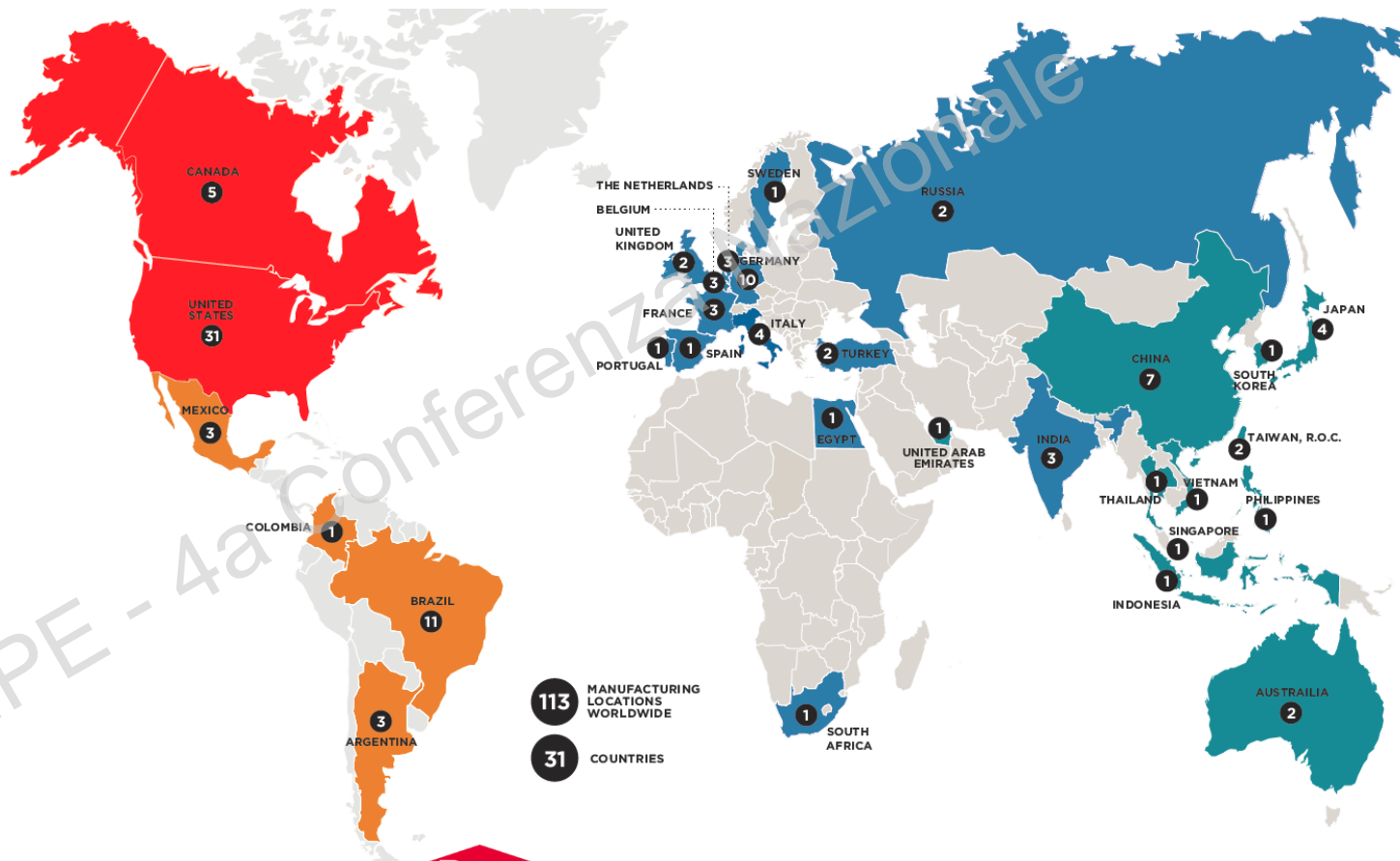
38 locations
15 countries

ASIA PACIFIC

21 locations
10 countries

LATIN AMERICA

18 locations
4 countries



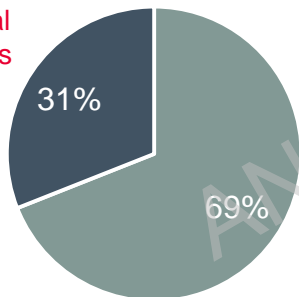
INDUSTRIAL INTERMEDIATES & INFRASTRUCTURE

Industrial Intermediates & Infrastructure

consists of two customer-centric global businesses—Industrial Solutions and Polyurethanes & CAV—that develop important intermediate chemicals that are essential to manufacturing processes, as well as downstream, customized materials and formulations that use advanced development technologies. These businesses primarily produce and market ethylene oxide and propylene oxide derivatives that are aligned to market segments as diverse as appliances, coatings, infrastructure and oil and gas.

2018 Pro Forma Sales by Global Business¹

Industrial Solutions



PU & CAV

Pro Forma Net Sales: \$15.5B

Polyurethanes & CAV

- **Strengthening Differentiated Portfolio**
- **Relentless Pursuit of Efficiency**
- **Enhancing Global Reach**
- **~3,700 employees**

ADDRESSABLE MARKET SEGMENT OF \$60B
GROWING AT >1.5x GLOBAL GDP

ComfortScience



CONSUMER

Bedding, Mattresses, Pillows, Furniture, Footwear



TRANSPORTATION

Seat Cushioning, Sound Dampening, Acoustics

StructuralScience



INFRASTRUCTURE

Elastomers, Adhesives & Sealants, Polymer Concrete, Composites, Roofing, Dry Mix Mortar



OIL & GAS

Sand Coatings, Pipe Insulation Solutions

InsulationScience



CONSTRUCTION

Building Insulation, Entry & Garage Doors, Concrete Additives



APPLIANCE

Domestics, Commercial and Professional Cold Chain

Industrial Solutions

- **Integrated Ethylene/Propylene Model**
- **Strong JV Partnerships**
- **Flexible, Global Asset Footprint**
- **Attractive Growth Levers**
- **~1,800 Employees**

MORE THAN 50% OF SALES IN MARKET SEGMENTS GROWING ABOVE GDP



SUSTAINABLE TEXTILES

ECOFAST™ Pure

Enabling unique, brighter colors while reducing water, energy, dye & chemical use



OIL & GAS PROCESSING

Providing expertise & solutions for enhanced oil extraction, productivity & lower emissions, helping customer meet regulations



3D PRINTING UNIVERSAL SUPPORT MATERIAL

EVOLV3D™ USM

3D printing support material that maintains structural integrity while providing a safer-to-handle, sustainable solution



(1) Source: Dow Inc. Amendment #4 to the Form 10 filed on 3/8/2019

DOW IN ITALY

DOW IN ITALY

Highlights

Opening of first sales office in Milan in **1960**

Around **440** employees

4 production sites and
1 global PU R&D center

Annual turnover 2018
~ **€ 962** million

Mozzate (Como):

Polyurethane and Specialty Resins

Mozzanica (Bergamo):

Water-based Acrylic Emulsions

Milano: *Head Offices*

Correggio (Reggio Emilia):

*PU Systems
Dow Performance Silicones*

Parona (Pavia):

Polyester Resin Adhesives

PRODUCTION FACILITIES

CORREGGIO

Polyurethane systems for a broad range of applications for major industries such as construction, automotive, footwear and furniture. The site also houses the global PU R&D and TS&D center for application technology, in particular for insulating rigid foams and flexible molded foams. And Dow Performance Silicones TS&D.

MOZZANICA

Water-based acrylic emulsions used in adhesives, coatings, leather, paper and textile applications.

MOZZATE

Polyurethane and specialty resins for the production of adhesives mainly used for flexible packaging for food and automotive applications as well as for paper coating. The site also produces resins for synthetic leather application.

PARONA

Polyester resin adhesives used in flexible packaging for food application and polyesters used in the polyurethane market of techno polymer, elastomer and footwear industry.

Dow POLYURETHANES

DOW CORREGGIO POLYURETHANES INNOVATION CENTER

Dow Polyurethanes
ComfortScience
StructuralScience
InsulationScience
Dow Performance Silicones



DOW CORREGGIO POLYURETHANES INNOVATION CENTER



Application Laboratory




Market Development Plant



Where innovation meets sustainability and performance

V PLUS *Perform*™ panel insulation technology helps create future-ready buildings by placing sustainability, energy-efficiency and people at the heart of design.

V PLUS *Perform*™

PANELS insulation technology by 



INSULATIONSCIENCE – V PLUS *PERFORM*TM

More sustainable buildings

Smart ingredients contributing to LEED® V4 and BREEAM green building ratings. Greater transparency of value chain.



Thinner building envelopes

Up to 20% thinner compared to conventional materials. Lighter construction and more indoor space.



Energy efficiency

Next-generation insulation technology achieving up to 18 mW/mK aged lambda, helping designers improve thermal performance of buildings.



Fire safety

Halogen-free flame-retardant technology. Enables achievement of Bs1d0 and FM 4882 standards.

Collaboration. It's where innovation begins.

We created V PLUS *Perform*TM with manufacturers, architects and sustainability experts. Because solving today's challenges requires many perspectives and close collaboration.





DOW PERFORMANCE SILICONES

DOW PERFORMANCE SILICONES

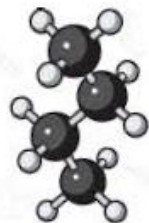
A High Quality, Global Alternative



> 50 years of integrated manufacturing expertise



PU foam generation, pilot scale testing capabilities



Over 200 unique silicone surfactant products



Engage with Dow commercial & technical partners

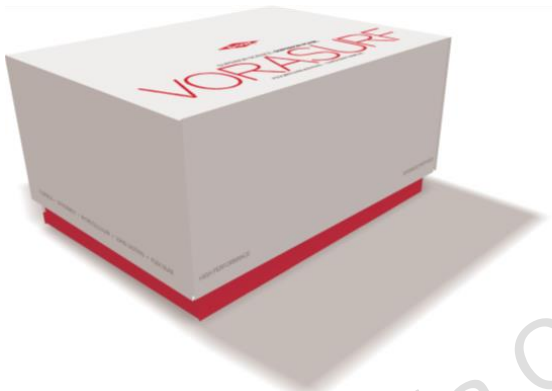


A New **ELEMENT** for Growth.

Committed to **reliable, cost-effective solutions** and application support



VORASURF™ POLYURETHANE ADDITIVES



VORASURF™

silicone polyurethane additives by



RIGID PUA SOLUTIONS

**PIR Board
Flex facer panels**



**VORASURF™ DC 5357 Additive
VORASURF™ DC 5098 Additive**

Spray Foam Insulation



VORASURF™ DC 193 Additive

General-purpose rigid foam surfactants for use in polyurethane and polyisocyanurate foams, gives enhanced aesthetics in construction applications



VORASURF™

SILICONE POLYURETHANE ADDITIVES

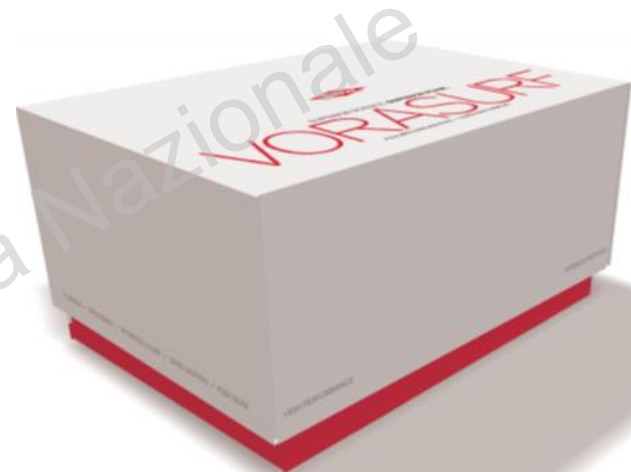


RIGID – CONSTRUCTION / APPLIANCE / CLOSED CELL SPRAY FOAM / GENERAL-PURPOSE

SURFACTANT	BUNSTOCK	SPRAY FOAM	LAMINATION BOARD	PIR BOARDSTOCK	HIGH DENSITY MOLDED	APPLIANCE	POUR-IN-PLACE	SALIENT FEATURES
VORASURF™ DC 193	✓	✓	✓	✓	✓	✓	✓	General-purpose surfactant for rigid foam applications; surfactant for footwear (shoe sole) and integral skin applications.
VORASURF™ DC 5103	✓	✓	✓	✓	✓	✓	✓	General-purpose surfactant for rigid foam applications; improved product clarity and reduced melting point compared to DC 193.
VORASURF™ DC 5604	✓	✓	✓	✓	✓	✓	✓	General-purpose rigid foam surfactant for use in polyurethane and polyiso-cyanurate foams; gives enhanced aesthetics to pentane-blown appliance applications.
VORASURF™ DC 5357	—	—	✓	✓	—	✓	✓	Surfactant for insulation panels, pour-in-place applications.
VORASURF™ DC 5575	—	✓	✓	✓	—	—	—	General surfactant for hydrocarbon and water-blown rigid foam systems.
VORASURF™ SF 2937	✓	✓	✓	—	✓	✓	✓	General-purpose surfactant for rigid foam; surfactant for HFOs blown systems and for microcellular foam.
VORASURF™ RF 5374	—	—	—	—	—	✓	✓	Surfactant for pentanes and HFOs blown rigid foam systems.
VORASURF™ RF 5382	✓	✓	✓	—	—	✓	✓	General-purpose surfactant for rigid foam applications; with enhanced pentane compatibility.

✓ = Attribute present in product. — = Attribute absent in product. Relative effects of surfactants are based on studies in standard formulations. Formulation to formulation differences may vary.

*Polyiso-cyanurate



- VORASURF™ Rigid sample kit
- VORASURF™ FlexSlab Sample kit
- VORASURF™ Flex/Auto molded Sample kit



Seek

Together™

ANPE - 4a Conferenza Nazionale