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International Project Solutions

Grace for Energy and Industrial Facilities



Tianwan Nuclear Power Plant | Lian Yun Gang, China

GRACE

Grace for Energy and Industrial Facilities

Grace products have been used on energy and industrial facilities around the world for almost half a century

EMEA

Ajman Desalination Plant	Ajman, UAE
Al Awir Power Station	Dubai, UAE
Al Khaleej Ceramics Factory	Dubai, UAE
Aromatics Plant	Yanbu, Saudi Arabia
Asab Gas Injection Plant	Asab, UAE
Barka Desalination & Power Plant	Barka, Oman
Ceramic Sanitary Ware Factory	Sohar, Oman
Crude Oil Tanks	Halul Island, Qatar
Dhofar Vegetable Oil and Derivatives Plant	Muscat, Oman
Dubal Condor Project	Dubai, UAE
Dukhan Fire Training Ground	Dukhan, Qatar
Dukhan Flare Upgrade	Dukhan, Qatar
Dukhan Gas Lift	Dukhan, Qatar
Dukhan Petroleum Site	Dukhan, Qatar
Education City, Central Plants	Doha, Qatar
Emal Taweelah smelter	Abu Dhabi, UAE
EREN Power Plant	Zonguldak, Turkey
Fujairah Power & Desalination Plant	Fujairah, UAE
Ghalilah Desalination Plant	Ras Al Khaima, UAE
Jebel Ali Power & Desalination Plants	Dubai, UAE
Kemapco Plant	Aqaba, Jordan
Khuff Well Head Treatment Plant	Dukhan, Qatar
Layyah Power and Desalination Plant*	Sharjah, UAE
Lee Breakwater Piperack	Ras Laffan, Qatar
Mesaieed Commercial Complex	Doha, Qatar
Messaieed Refinery	Messaieed, Qatar
NGL Repairs	Doha, Qatar
Poultry Sheds at Tamrait	Tamrait, Oman
Power & Water Station	Doha, Qatar
PTA Plant	Yanbu, Saudi Arabia
Q-Chem Ethylene & Hexane Plants	Doha, Qatar
Ras Abu Aboud Distiller	Doha, Qatar
Ras Al Khaima Desalination Plant	Ras Al Khaima, UAE
Ras Laffan Common Cooling Water Project	Doha, Qatar
Ras Laffan Messaieed Sweet Gas Pipeline	Ras Laffan, Qatar
Ras Laffan Power & Desalination Plant	Ras Laffan, Qatar
Ras Laffan Utilisation Project	Doha, Qatar
Ras Laffan Water Plant Island	Ras Laffan, Qatar
Rolling Mill at Celsa Steel Plant	Ostrowiec Swietokrzyski, Poland
Saadiyat Water Tanks	Abu Dhabi, UAE
Safi Warehouse & Plant Upgrade	Arab Potash, Jordan
Seawater Intake	Sohar, Oman
Sellafield	Cumbria, UK
Sellafield Nuclear Fuel Reprocessing Plant	Cumbria, UK
Sewage-Treatment Plant	Nowiny, Poland
Shaka Cement Factory	Shaka, Lebanon
Shuweihat S2 IWPP	Abu Dhabi, UAE
Sizewell B Power Station	Essex, UK
Sohar Feed Mill for Poultry Farms	Sohar, Oman
Sohar-Khaboora 132 KV Powerline	Sohar, Oman
Taweela "B" Extension Project	Abu Dhabi, UAE
Tissue Mill & Converting Factory	Manama, Bahrain
UPC New Factory, DIC	Dubai, UAE
Wasit Power Station	Sharjah, UAE
Water Storage Tanks	Ajman & Ras Al Khaimah, UAE

AMERICAS

Aduora	Bahia, Brazil
Affiliated Foods Distribution Center	Kenosha, WI
Allegheny Technologies Pit	North Skill Valley, UT
Amgen Facility Expansion	Carolina, PR
ATK 2nd Project	Cumberland, MA
Avon	Cabreuva, Brazil
Backes and Hughs	Macaé, Brazil

Barbados Light & Power Plant	Barbados
Braidwood	Braidwood, IL
CEZinc	Valleyfield, QC, Canada
Envirofocus Battery Recycling Plant	Tampa, FL
Hanford Nuclear Site	Hanford, WA
Hydro Quebec	Quebec City, QC, Canada
Lilly Caribe	Carolina, PR
Parque Guarnambi	Bahia, Brazil
River Protection Project – Hanford	Richland, WA
Roof tile plant	Sanderson, FL
Shearon Harris Voegtel	Charlotte, NC
South Texas Power Plant	Taft City, TX
St Lucie II	Stuart, FL
Texaco	Anacortes, WA
Vought Aircraft Ind. – Boeing Aircraft	Charleston, SC
Waterford	Taft, LA
WPPSS	Hanford, WA

ASIA PACIFIC

3A	Yeochon, S. Korea
4th Nuclear Station	Taipei, Taiwan
Ayer Merbau Petrochemical	Zurong, Singapore
Coming Plant (Taichung Science Park)	Taichung, Taiwan
Coming Plant 3	Taichung, Taiwan
COSTCO Sangkae Branch	Seoul, S. Korea
CPC-Tao Yuan Plant	Tao Yuan, Taiwan
Daesan LG Chemical	Daesan, S. Korea
Daesan Lotte EG Plant	Daesan, S. Korea
Daya Bay Nuclear Power Plant	Guangdong, China
Der An Kong Chi Electronical Plant	Hsinchu, Taiwan
GS Caltex Facilities	Yeochon, S. Korea
Haiyang Nuclear Power Plants	Shandong, China
HMC Huizhou MMA Plant	Huzhou, China
Hongyanghe Nuclear Power Plant	Liaoning, China
Hyundai Petrochemical Plant	Daesan, S. Korea
Incheon LNG	Inchon, S. Korea
Kao Chiao Chemical Plant	Kaohsiung, Taiwan
Kim Hae Distribution Center	Kim Hae, S. Korea
Kwang Myung Distribution Center	KwangMyung, S. Korea
LG Chemical Plant	Yeochon, S. Korea
Lidong Aromatics Complex	Quingdong, China
Lotte LPC	Daesan, S. Korea
Lotte Ohsan Distribution Center	Osan, S. Korea
Mobile Refinery Plant	Zurong, Singapore
Phamaceutical Plant	Singapore
Pulau Ayer Merbau PCS II	Zurong, Singapore
Samsung BTX	Daesan, S. Korea
Sanmen Nuclear Power Plants 1 & 2	Zhejiang, China
SAP	Yeochon, S. Korea
Senko Incineration Plant	Singapore
Shin Gori Nuclear Power Plant	Gori, S. Korea
Shin Wolsung Nuclear Power Plant	Wolsung, S. Korea
Shinpaju Transformer Substation	Paju, S. Korea
S-Oil Ulsan	Ulsan, S. Korea
SR Extend (PBL)	Yeochon, S. Korea
SS TPI	Yeochon, S. Korea
Surveillance Radar Program	Hsinchu, Taiwan
Taishan Nuclear Power Plant	Guangdong, China
Tianwan Nuclear Power Plant	Lian Yun Gang, China
Trial Factory for Nuclear Waste Disposal	Yumen, China
TSMC 12 Plant	Hsinchu, Taiwan
U.S. Pyungtak Air Base	Pyungtak, S. Korea
Uljin Nuclear Power Plant	Uljin, S. Korea
Wolsung Nuclear Power Plant	Wolsung, S. Korea
Youngkwang Nuclear Power Plant	Yongkwang, S. Korea
Yuan Her Electronical Plant	Taipei, Taiwan

Grace for Energy and Industrial Facilities

“ *The machine does not isolate man from the great problems of nature, but plunges him more deeply into them.* ”

– Antoine de Saint-Exupéry

Grace Capabilities

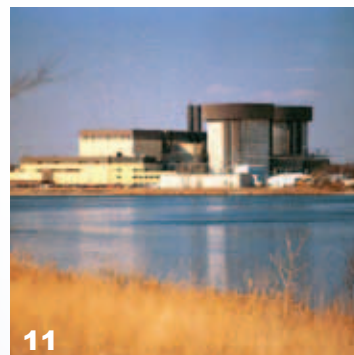
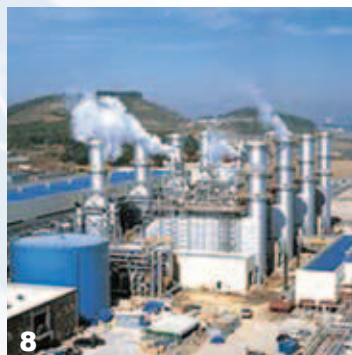
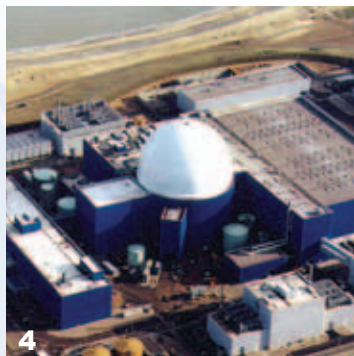
Heavy industrial facilities and energy plants require substantial capital investment in process equipment, design and construction. It is critical for owners of such structures that the entire building performs to highest standards to ensure the return on their capital investment, the long-term service life of their industrial complex and the safety of their workers. Additionally, owners require the best protection from contaminants, either in the external environment or as part of the industrial process.

Grace provides a range of systems to protect energy and industrial facilities, regardless of their location around the globe – even in remote and hostile environments. These solutions help prevent interruptions to production associated with costly and prolonged maintenance. From substructure concrete protection, through structural concrete mixes, to above grade steel fire protection, Grace has solutions to protect these facilities from the most damaging effects of the elements and industrial processes.

Working on projects across borders and continents has become a common and necessary practice in today's environment. Grace has a global team committed to ensure international projects run smoothly and get the full support and coordination from concept design through construction and close out. Our broad technology portfolio and expertise help to bridge differences in construction practices, regulatory requirements, and cultures while enhancing the durability and longevity of your designs.

Grace Brands are Globally Recognized





1 Emal Taweelah smelter | Abu Dhabi, UAE

2 CEZinc | Valleyfield, QC, Canada

3 Mesaieed Commercial Complex | Doha, Qatar

4 Sizewell B Power Station | Essex, UK

5 Jebel Ali Power & Desalination Plant | Dubai, UAE

6 Sellafield Nuclear Fuel Reprocessing Plant | Cumbria, UK

7 Vought Aircraft Ind. – Boeing Aircraft | Charleston, SC, USA

8 Hyundai Petrochemical Plant | Daesan, S. Korea

9 Daya Bay Nuclear Power Plant | Guangdong, China

10 Barbados Light & Power Plant | Barbados

11 Braidwood | Braidwood, IL, USA

12 GS Caltex Facilities | Yeochon, S. Korea



Grace for Energy and Industrial Facilities

Application Areas

Substructure:

Essential processes of modern power plants and industrial facilities require dry environments to ensure continued operations and safety. Grace's fully-adhered waterproofing membranes provide maximum protection against water pressure, ground settlement and contaminants (such as chlorides, sulfates, radon, methane, etc.) and are used globally to protect the most critical of structures, including nuclear plants.



Structural Concrete:

Grace offers a wide variety of admixtures and fibers to meet design and construction requirements. Cracking in slab-on-ground and composite steel decks are mitigated through the use of synthetic macro fibers and shrinkage reducing admixtures. Retarders and accelerators are employed routinely to accommodate temperature extremes. The use of high-range water-reducers allows construction of heavily reinforced members, such as, turbine supports and mat foundations.



Structural Steel Fire Protection:

Grace's light weight petrochemical cementitious spray-applied fireproofing has been a global standard for almost half a century in the protection of structural steel from the effects of fire. Grace's passive fireproofing products have been tested according to all major national and international fire standards (including 4 hours UL 1709 / BS 476: Part 20 Appendix D hydrocarbon fire rating; 4 hours UL 263 / ASTM E-119 / ISO 834 fire rating); they are UL approved for exterior use without a topcoat. Their superior physical characteristics (including high bond and compressive strengths, hardness, abrasion, blast and corrosion resistance) coupled with their high yield and thickness per coat make them an excellent choice even for the most severe applications and tight schedules.



Sloped Roof:

Grace roofing underlayments have been used globally under most demanding conditions, including complex roof designs, under variety of roof coverings and in diverse and extreme climates. While water can often pass the roof cladding, it cannot get past the Grace fully-bonded underlayment. Grace membranes protect against leaks, caused by wind driven rain, snow and ice melts, maintaining a dry working environment and extending the life of the structure.



Containment and Bunds:

Grace can provide guidance on how to improve the performance of containment structures and bunds. Safe storage of liquids (sometimes hazardous) and the concrete performance under thermal and shrinkage regimes is crucial. Combined with water retaining design codes, Grace's shrinkage reducing admixtures and macro fibers help provide enhanced crack control and our hydrophilic waterbar and multi-injection hose systems protect the joints.



Jetties and Wharves:

Quay walls, jetties and wharves are exposed to the harsh spray and tidal zones. At these areas chlorides penetrate the cover concrete to attack the steel reinforcement. Grace's corrosion inhibiting admixtures have a long track record for over 30 years protecting these marine facilities, ensuring uninterrupted operations.



Grace for Energy and Industrial Facilities

Grace technical experts can assist throughout your project delivery process

- Recommend the optimal product solution for your project location.
- Work internationally with the project team throughout the entire design and construction process.
- Provide jobsite expertise and support.
- Facilitate global projects in all major construction segments.

Grace supplies products to more than 120 countries worldwide, through its plants and facilities in more than 40 countries, supported by a team of almost 6,000 people.

Key regional offices include:

UK (London), France (Paris), Italy (Milan), Belgium (Brussels), Poland (Warsaw), Turkey (Istanbul), U.A.E. (Dubai), Saudi Arabia (Dammam), India (Delhi), China (Shanghai, Hong Kong), Singapore, South Korea (Seoul), Australia (Sydney), USA (Boston, Chicago, San Francisco), Brazil (Sao Paulo) and many more locations globally.

Worldwide Headquarters

North America

W. R. Grace & Co.—Conn., 62 Whittemore Avenue, Cambridge, MA 02140-1692

www.graceconstruction.com/international-projects

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