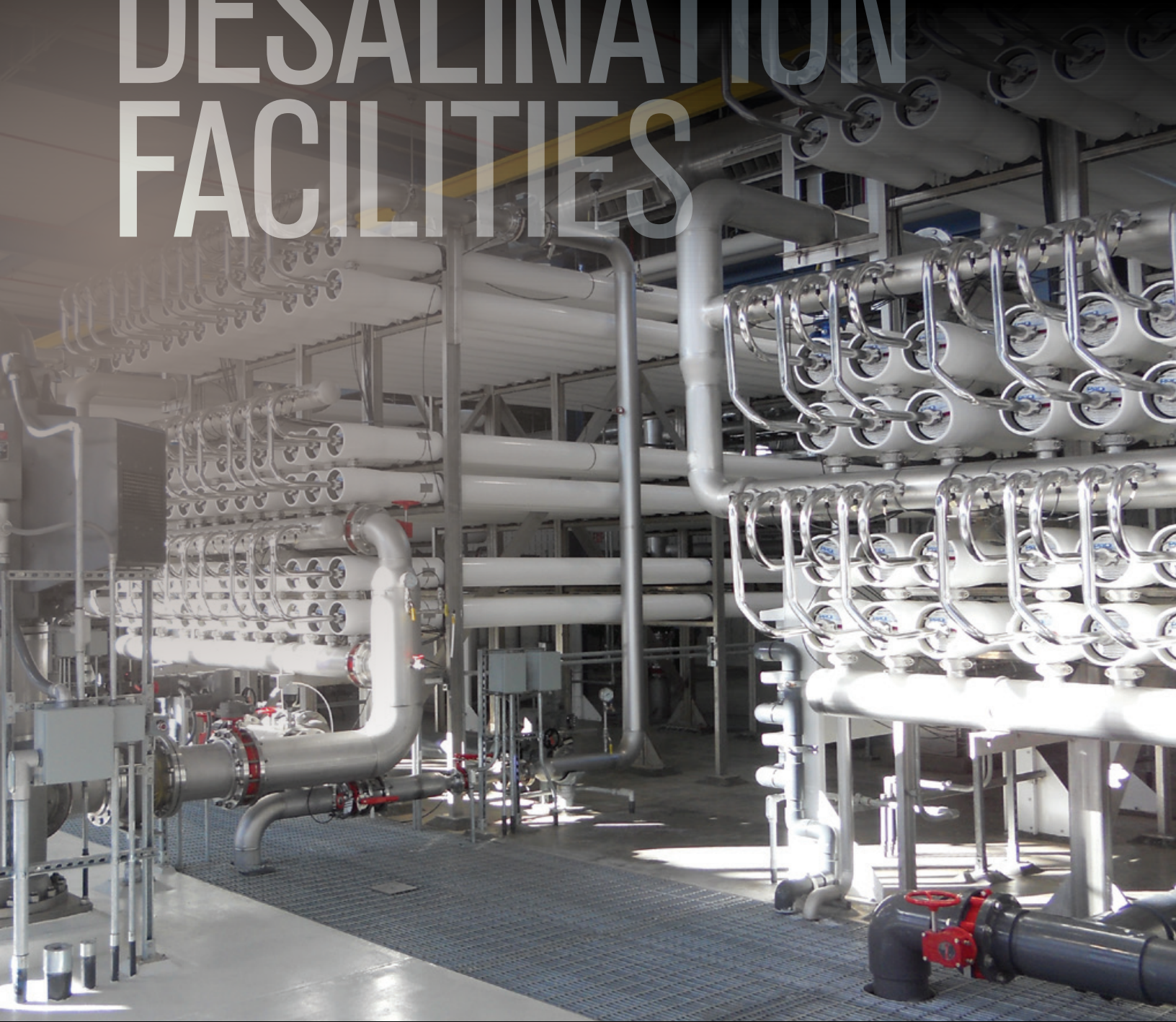


VICTAULIC® MECHANICAL PIPING SOLUTIONS FOR

# DESALINATION FACILITIES





# ENGINEERING CONFIDENCE INTO EVERY BUILD

Victaulic designs and manufactures mechanical pipe joining solutions that engineer confidence into every build. Customers trust our high-quality products and services to increase overall system durability in the most demanding construction projects and operating conditions.

Since 1919, Victaulic's no-flame, mechanical pipe joining solutions and drawing services have optimized construction productivity and reduced risk, ensuring projects are completed safely, on time and within budget. Driven by a spirit of continuous innovation, Victaulic's portfolio of 10,000+ products and patented pipe joining and flow control technologies promote freedom of design, safe and efficient jobsites, as well as simplified inspection and maintenance for the life of any project.

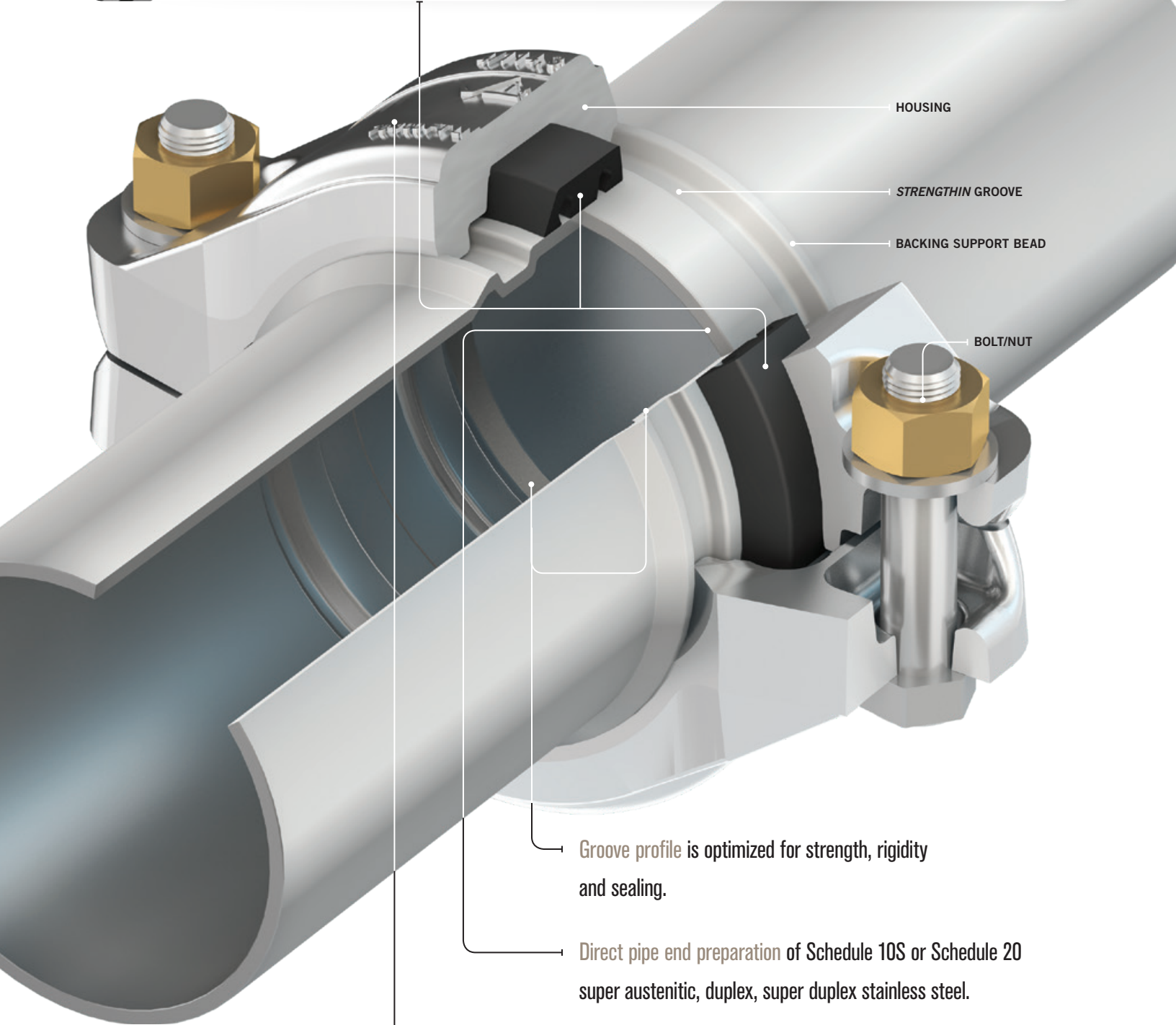


With more than 40 international facilities, Victaulic helps customers in over 140 countries succeed in the global construction industry. Our products are found on piping systems within the largest and most complex commercial buildings and industrial environments such as oil and gas, chemical, mining, power generation, water and wastewater treatment, military and marine. Learn more about how our innovative piping products and design services can engineer confidence into your build at [www.victaulic.com](http://www.victaulic.com).

**THAT'S HOW WE ARE ENGINEERING CONFIDENCE INTO EVERY BUILD.**

## STRENGTHIN™ COUPLINGS FEATURE THE VICTAULIC PROPRIETARY GRADE “EW” EPDM GASKET.

Grade “EW” EPDM is WRAS certified with approved microbiological resistance to BS 6920 for cold and hot potable water service up to +149°F | +65°C.



HOUSING

STRENGTHIN GROOVE

BACKING SUPPORT BEAD

BOLT/NUT

Groove profile is optimized for strength, rigidity and sealing.

Direct pipe end preparation of Schedule 10S or Schedule 20 super austenitic, duplex, super duplex stainless steel.

Coating – A multi-layer, multi-functional coating providing impact and long term corrosion resistance.

# THE BENEFITS OF USING VICTAULIC®

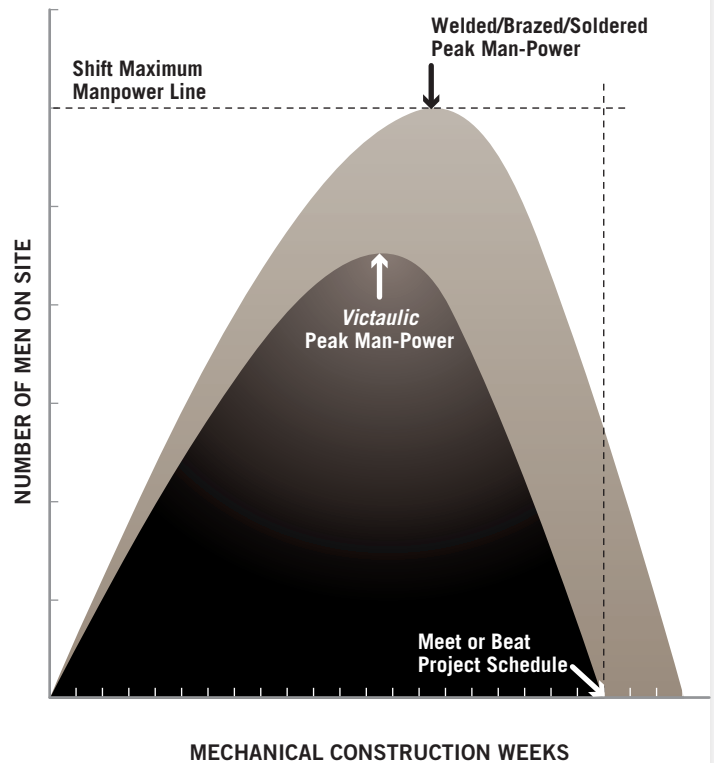
*Victaulic* grooved mechanical systems are an ideal fit for the desalination market. With products designed and built to fit even the most challenging and abrasive applications, look to *Victaulic* to provide industry leading solutions with proven performance.



## SPEED OF DEPLOYMENT

Piping systems with *Victaulic* grooved products feature a **40–60 percent reduction in installation man-hours** over alternative joining methods, and leverage a worker skill base that can be quickly trained and globally available, greatly reducing the potential for schedule delays.

Innovations, like our grooved system for high pressure stainless steel systems result in quicker and less costly installations, reducing exposure to jobsite accidents and overall man hours.





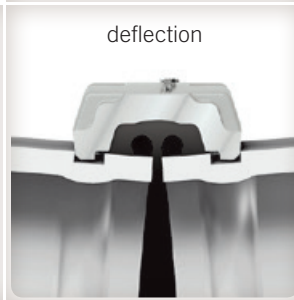
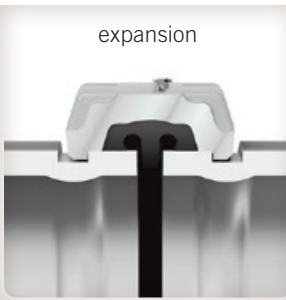


VICTAULIC® GROOVED END PIPING SYSTEMS PROVIDE:

**Easy system maintenance and expansion** – through simple coupling disassembly that allows for easy access.

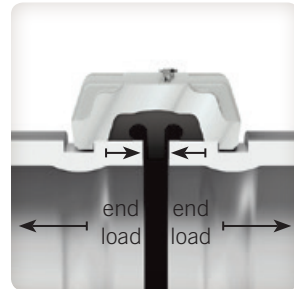
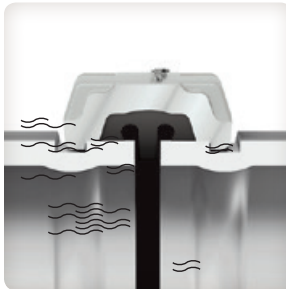


**Alignment ease** – through a design that allows for full rotation of the pipe and system components before tightening.



**Flexibility or Rigidity** – with the inherent axial movement and deflection properties of **flexible couplings** in a groove system. May be used to accommodate pipeline thermal expansion and contraction, misalignment and settlement, and seismic stress absorption. Alternatively, **rigid couplings** can provide weld-like rigidity.

**Noise and vibration attenuation** – by isolating the transference of vibration at each joint.

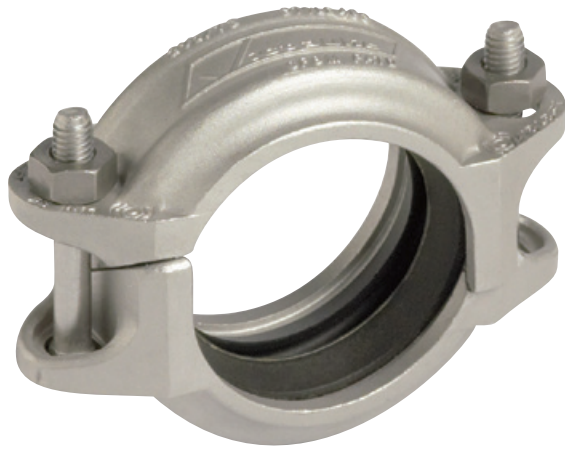


**Self restrained pipe joints** – Couplings engage the pipe grooves to hold the pipes against full pressure thrust loads without the need of supplemental restraints.

# VICTAULIC<sup>®</sup> PRODUCTS FOR DESALINATION APPLICATIONS







## Type 316 Rigid Coupling

STYLE 489

[Download publication 17.25](#) for complete information

- Greatly reduces linear or angular movement and is useful for valve connections where rigidity is required
- Designed for use with fittings and valves featuring *Victaulic* Original Groove System (OGS) grooved ends for fast installation
- Sizes from 1½–12" | DN40–DN300
- Pressures up to 600 psi | 4137 kPa | 41 bar



## Duplex Rigid Coupling

STYLE 489DX

[Download publication 17.33](#) for complete information

- Greatly reduces linear or angular movement and is useful for valve connections where rigidity is required
- Designed for use with fittings and valves featuring *Victaulic* Original Groove System (OGS) grooved ends for fast installation
- Sizes from 2–12" | DN50–DN300
- Pressures up to 1200 psi | 8274 kPa | 83 bar
- Optional super duplex stainless steel housing



## StrengThin™ High-Pressure Rigid Coupling

STYLE D08

[Download publication 17.30](#) for complete information

- Designed to accommodate high pressure weld-like load carrying capabilities on stainless steel systems
- High strength groove designed to provide increased performance on thin wall super austenitic, duplex and super duplex stainless steel pipe
- Exclusively for use on pipe which feature ends formed with the *Victaulic* proprietary *StrengThin* groove profile
- Sizes from 2–20" | DN50–DN500
- Pressures up to 1200 psi | 8274 kPa | 83 bar



## Type 316 Flexible Coupling

STYLE 77S

[Download publication 17.03](#) for complete information

- Provides a rugged mechanical joint for grooved end stainless steel piping systems
- Designed for use with fittings and valves featuring *Victaulic* Original Groove System (OGS) grooved ends for fast installation
- Sizes from 8–18" | DN200–DN450
- Pressures up to 300 psi | 2068 kPa | 21 bar



## Duplex Flexible Coupling

STYLE 77DX

[Download publication 17.20](#) for complete information

- Designed to provide a rugged mechanical joint for roll grooved stainless steel systems
- Designed for use with fittings and valves featuring *Victaulic* Original Groove System (OGS) grooved ends for fast installation
- Sizes from ¾–6" | DN20–DN150
- Pressures up to 1200 psi | 8274 kPa | 83 bar
- Optional super duplex stainless steel housing



## Type 316 Lightweight Flexible Coupling

STYLE 475

[Download publication 17.14](#) for complete information

- Designed to provide a flexible mechanical joint for grooved end stainless steel piping systems
- Designed for use with fittings and valves featuring *Victaulic* Original Groove System (OGS) grooved ends for fast installation
- Sizes from 1–4" | DN25–165.1 mm
- Pressures up to 500 psi | 3447 kPa | 34 bar





## Duplex Lightweight Flexible Coupling

STYLE 475DX

[Download publication 17.34](#) for complete information

- Unique coupling design permits assembly by removing one nut/bolt and scissoring housing over gasket
- Designed for use with fittings and valves featuring *Victaulic* Original Groove System (OGS) grooved ends for fast installation
- Sizes from 1–4" | DN25–DN100
- Pressures up to 500 psi | 3447 kPa | 34 bar
- Optional super duplex stainless steel housing



## Composite Flexible Coupling

STYLE 171

[Download publication 06.22](#) for complete information

- Flexible pipe joint which allows for expansion, contraction and deflection
- For corrosive applications such as reverse osmosis systems
- For use on PVC pipe utilizing *Victaulic* OGS roll or cut groove profile
- Sizes from 1½–4" | DN40–DN100
- Pressures up to 150 psi | 1034 kPa | 10 bar
- For stainless steel and FRP applications, contact *Victaulic*



## Duplex Plug Valve

SERIES 465

[Download publication 17.36](#) for complete information

- Typically used in reverse osmosis desalination plants for on/off and control services
- Available without operator or with manual, pneumatic, hydraulic and electric actuators
- Available for use with pipe which features ends formed with either the *Victaulic* proprietary StrengThin™ groove profile or *Victaulic* Original Groove System (OGS) profile, specify when ordering
- Sizes from 2–20" | DN50–DN500
- Pressures up to 1450 psi | 9997 kPa | 100 bar



## Duplex Plug Valve

SERIES 466

[Download publication 17.39](#) for complete information

- Typically used in reverse osmosis desalination plants for on/off and control services or in submerged applications
- Available for use with pipe which features ends formed with either the *Victaulic* proprietary *StrengThin™* groove profile or *Victaulic* Original Groove System (OGS) profile, specify when ordering
- Sizes from 10–24" | DN250–DN600
- Pressures up to 1200 psi | 8274 kPa | 83 bar



## Duplex Double Disc Check Valve

SERIES 415

[Download publication 17.37](#) for complete information

- Designed for use with pipe which features ends formed with either the *Victaulic* proprietary *StrengThin* groove profile or *Victaulic* Original Groove System (OGS) profile, specify when ordering
- Sizes from 2–18" | DN50–DN450
- Pressures up to 1200 psi | 8274 kPa | 83 bar



## Type 316 Vic-Ball Valve

SERIES 726S

[Download publication 17.22](#) for complete information

- High pressure Type 316 stainless steel standard port ball valve with *Victaulic* Original Groove System (OGS) grooved ends
- Sizes from 1½–6" | DN40–DN150
- Pressures up to 1000 psi | 6895 kPa | 69 bar





## Super Duplex *Vic-Ball* Valve

SERIES 726D

[Download publication 17.28](#) for complete information

- High pressure super duplex stainless steel standard port ball valve with *Victaulic* Original Groove System (OGS) grooved ends
- Sizes from 2–6" | DN50–DN150
- Pressures up to 1200 psi | 8274 kPa | 83 bar



## StrengThin™ High-Pressure Fittings

[Download publication 17.32](#) for complete information

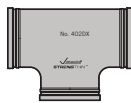
- Designed for use on high pressure stainless steel piping systems
- Exclusively for use on pipe which feature ends formed with the *Victaulic* proprietary *StrengThin* groove profile
- Sizes from 2–20" | DN50–DN500
- Pressures up to 1200 psi | 8274 kPa | 83 bar



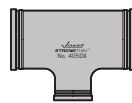
**No. 401DX**  
90° Elbow



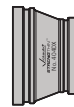
**No. 403DX**  
45° Elbow



**No. 402DX**  
Tee



**No. 405DX**  
Reducing  
Tee



**No. 404DX**  
Concentric  
Reducer



**No. 406DX**  
Cap

## ANSI Schedule 10S Fittings

[Download publication 17.16](#) for complete information



- Grooved ends eliminate pipe end preparation for the fittings
- Designed for use with couplings featuring *Victaulic* Original Groove System (OGS) grooved ends for fast installation
- Sizes from ¾–12" | DN20–DN300
- Available in Type 304L or 316L
- [Download publication 17.27](#) for stainless steel flange options



**No. 410 SS**  
90° Elbow



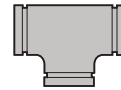
**No. 411 SS**  
45° Elbow



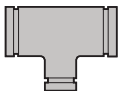
**No. 412 SS**  
22½° Elbow



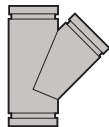
**No. 413 SS**  
11¼° Elbow



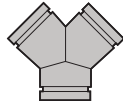
**No. 420 SS**  
Tee



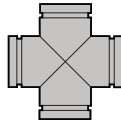
**No. 425 SS**  
Grooved Branch  
Reducing Tee



**No. 430 SS**  
45° Lateral



**No. 433 SS**  
True Wye



**No. 435 SS**  
Cross



**No. 442 SS**  
Adapter Nipple  
(Groove x  
Bevel)



**No. 443 SS**  
Adapter Nipple  
(Groove x  
Groove)



**No. 450 SS**  
Concentric  
Reducer



**No. 451 SS**  
Eccentric  
Reducer



**No. 460 SS**  
Cap



**No. 441N**  
Flanged  
Adapter Nipple  
(EMEA-I Only)



**No. 445F**  
Flat Face Flanged  
Adapter Nipple



**No. 445R**  
Raised Face Flanged  
Adapter Nipple





## ANSI Schedule 40S Fittings

[Download publication 17.16](#) for complete information

- Grooved ends eliminate pipe end preparation for the fittings
- Designed for use with couplings featuring *Victaulic* Original Groove System (OGS) grooved ends for fast installation
- Sizes from ¾–12" | DN20–DN300
- Available in Type 304L or 316L
- Designed for higher pressure systems
- [Download publication 17.27](#) for stainless steel flange options



**No. 410HSS**  
90° Elbow



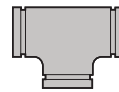
**No. 411HSS**  
45° Elbow



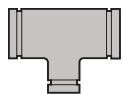
**No. 412HSS**  
22½° Elbow



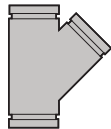
**No. 413HSS**  
11¼° Elbow



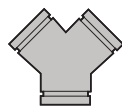
**No. 420HSS**  
Tee



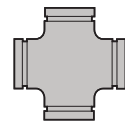
**No. 425HSS**  
Grooved Branch  
Reducing Tee



**No. 430HSS**  
45° Lateral



**No. 433HSS**  
True Wye



**No. 435HSS**  
Cross



**No. 440HSS**  
Adapter Nipple  
(Groove x  
Thread)



**No. 442HSS**  
Adapter Nipple  
(Groove x  
Bevel)



**No. 443HSS**  
Adapter Nipple  
(Groove x  
Groove)



**No. 450HSS**  
Concentric  
Reducer



**No. 451HSS**  
Eccentric  
Reducer



**No. 460HSS**  
Cap



**No. 441N**  
Flanged  
Adapter Nipple  
(EMEA-I Only)



**No. 445F**  
Flat Face Flanged  
Adapter Nipple



**No. 445R**  
Raised Face Flanged  
Adapter Nipple

# CASE STUDY

## SOUTHERN SEA WATER AUTHORITY PERTH 2 DESALINATION PLANT

Southern Sea Water Authority Perth 2, is a desalination plant supporting the greater Perth Region of Western Australia. This 50 million gallon per day desalination plant was facing imposing deadlines with a mandate to produce water on an extremely tight construction schedule.





## PROJECT

**Type of Facility:**

Desalination

**Victaulic Solutions:**

- Reduce Project Labor
- Reduce Project Schedule
- Reduce Cost

**Owner:**

SSWA – Southern Sea Water Authority

**Contractor:**

Tecnicas Reunidas

**Engineer/Consultant:**

Tecnicas Reunidas



With SSWA looking to reduce overall project labor, schedule and cost, Victaulic proposed drawings supplied by Victaulic Construction Piping Services which presented conversions of welded and flanged joints and valve assemblies to *Victaulic* grooved piping solutions, including the *StrengThin*™ System for high pressure on thin-wall super duplex stainless steel piping.

The rapid field assembly of the *StrengThin* system and *Victaulic* high pressure plug valves dramatically reduced field man-hours and schedule impact. For example, total field installation time for a complete 16" | DN400 valve assembly was reduced from 2½ days to 10 minutes.

## SPECIFICATIONS

Services:	Pipe Materials:	Pipe Size Range:
High Pressure Reverse Osmosis System	Super Duplex Stainless Steel Pipe	2–16"   DN50–DN400

# ENGINEERING CONFIDENCE INTO EVERY BUILD



## United States and World Headquarters

4901 Kesslersville Road  
Easton, PA 18040 USA

1 800 PICK VIC  
1 800 742 5842  
(within North America)  
1 610 559 3300

[pickvic@victaulic.com](mailto:pickvic@victaulic.com)

## Spain

Poligono Industrial Bakiola, 9  
48498 – Arrankudiaga – Vizcaya  
Spain

34 944 059 515

[viceuro@victaulic.com](mailto:viceuro@victaulic.com)

[victaulic.com](http://victaulic.com)



MB-411 6513 REV D 12/2017

*Victaulic* and all other Victaulic marks are the trademarks or registered trademarks of Victaulic Company, and/or its affiliated entities, in the U.S. and/or other countries. All other trademarks listed herein are the property of their respective holders, in the U.S. and/or other countries. The terms "Patented" or "Patent Pending" refer to design or utility patents or patent applications for articles and/or methods of use in the United States and/or other countries.

© 2017 VICTAULIC COMPANY. ALL RIGHTS RESERVED.

