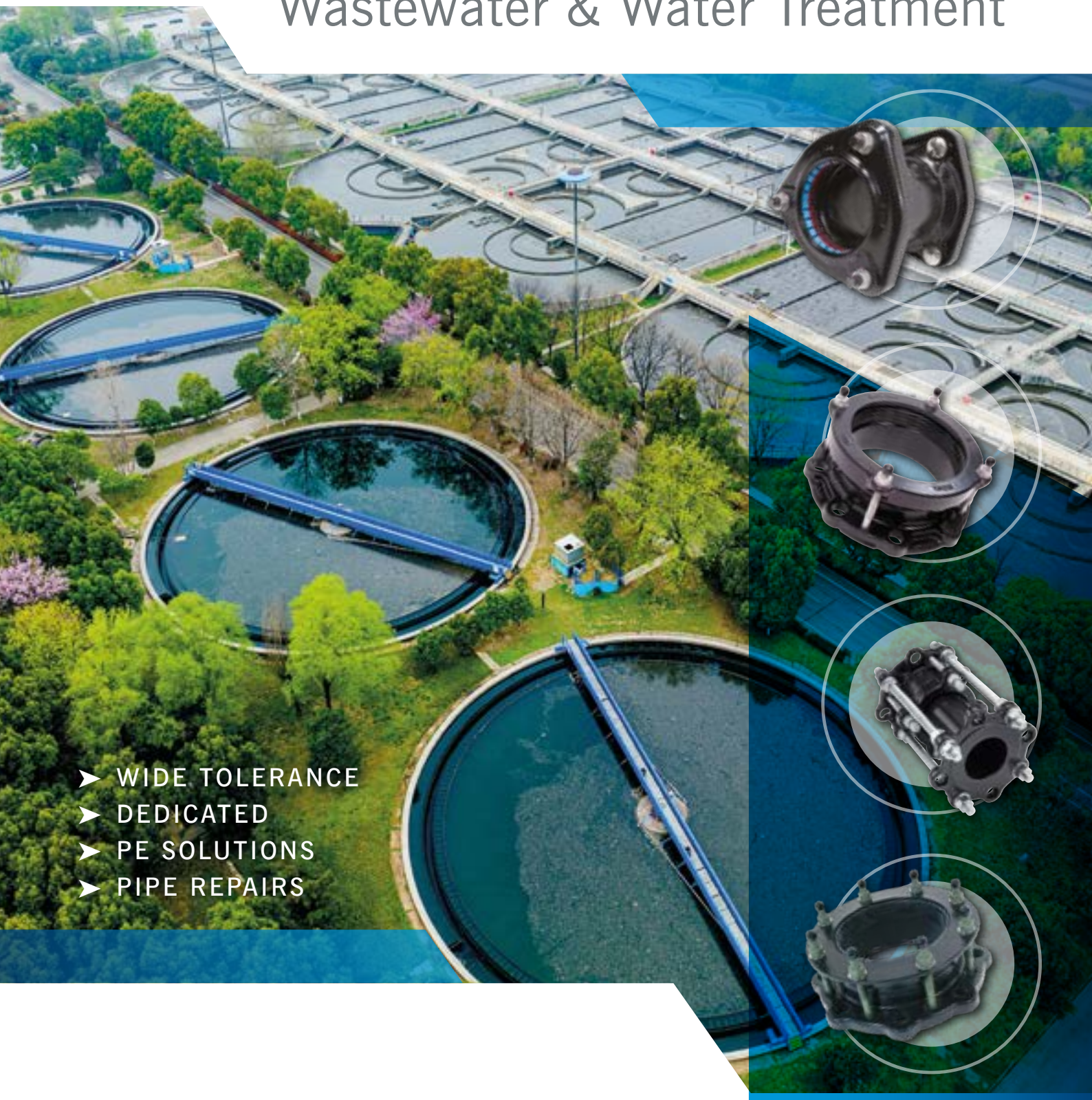
MECHANICAL JOINTING SOLUTIONS
Wastewater & Water Treatment



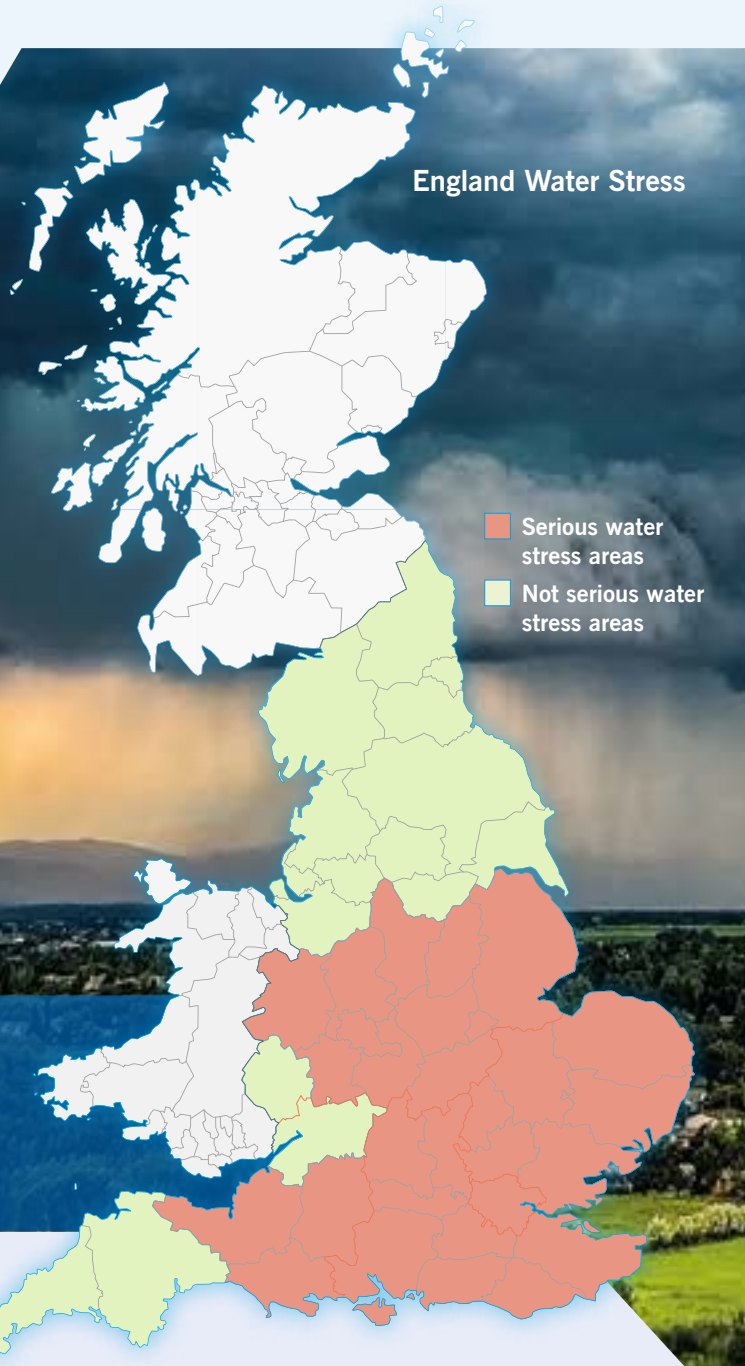
- WIDE TOLERANCE
- DEDICATED
- PE SOLUTIONS
- PIPE REPAIRS

VIKING JOHNSON®

PIONEERS IN PIPE SOLUTIONS

More frequent extreme UK weather events

Disrupting weather patterns, unpredictable water availability & contaminated water supplies can drastically effect the quantity & quality of water. In England, 65% of areas are deemed to be under serious water stress according to the Environment Agency Report Water stressed areas – final classification 2021.



Water treatment is extremely critical for public health & environmental protection

The primary goal of water treatment is to remove contamination and reduce impurities, to ensure it meets the required legal standards and that it is safe for its intended purposes such as drinking water for the population and ready to use for various industrial processes.

Viking Johnson manufacture fittings that are essential for the efficient and reliable operation of water treatment plants, ensuring the safe and consistent delivery of clean water to communities and industry.

Our connections achieve the following key benefits for the water treatment and environmental sector:

- Engineered for movement and expansion in the system to prevent stresses that lead to leaks or breakages
- Optimum access to critical assets enables easy routine maintenance to be completed
- Allow pipelines to be kept operational, through repair and maintenance programmes
- Designed for a long service life thereby reducing total infrastructure installed cost

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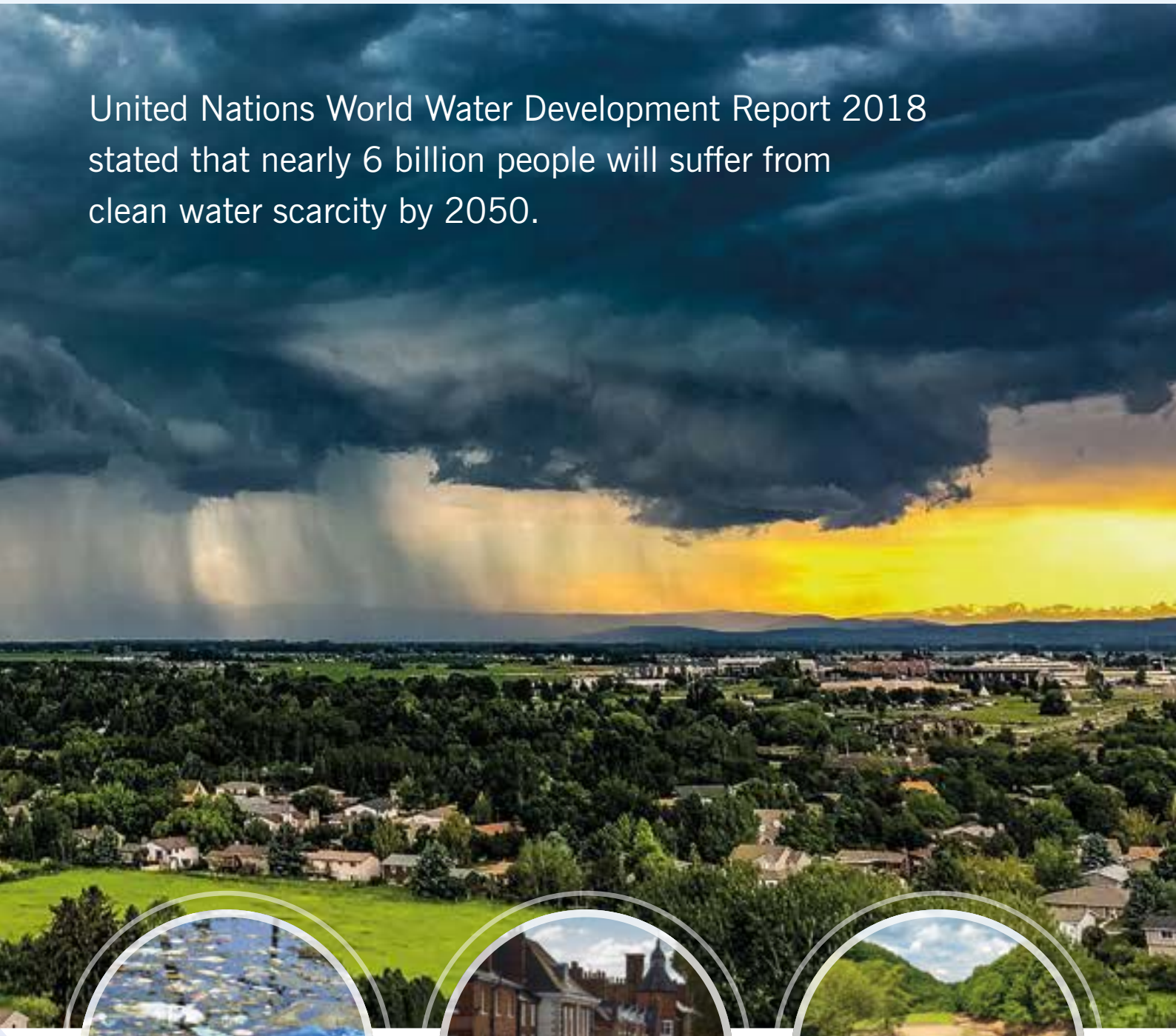
United Nations World Water Development Report 2018 stated that nearly 6 billion people will suffer from clean water scarcity by 2050.



Water contamination

Flash flooding

Water shortages

“The water industry needs to deliver a step change in investment and performance”

David Black, Chief Executive, OFWAT

According to the UK water utilities business plans for AMP8, water companies are proposing a significant increase in investment in the period of 2025-2030 which will continue to grow over the subsequent AMP cycles into 2045-50. This investment is essential to maintain the highest quality drinking water for a growing population, ensure the security of our water supply in the future and significantly reduce the amount of sewage entering rivers and seas.

How will this be achieved:

- Building new reservoirs to secure UK water supplies
- Invest to reduce overflow spills at more than triple the current rate, and modernisation of sewers
- Install advanced technology at sewage works to remove phosphorous from rivers

Unprecedented level of investment into wastewater by all UK water utilities over the next 5 AMP cycles

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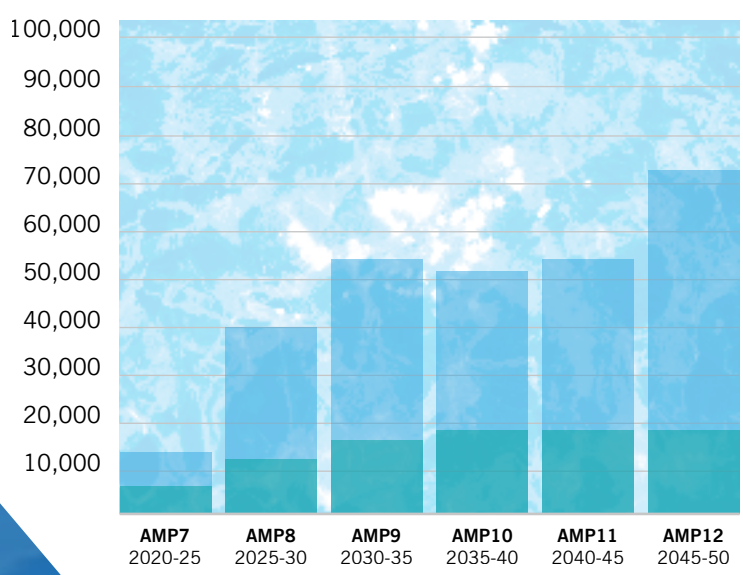
Estimated water and wastewater enhancement expenditure across the next five asset management periods (AMP's).



Water **Wastewater**

All amounts in financial year average 2022/23 prices, CPIH deflated. Enhancement expenditure excludes investments considered eligible for DPC or SIPR. Forecast investment data based on long-term delivery strategy core pathway.

Source: Ofwat, companies' AMP8 business plan data tables

Sewage Wastewater Plant Facility

Wastewater is generated from residential, commercial and industrial applications and also from rainwater/surface run off.

The water treatment overview

A The wastewater is then transferred to a treatment facility via a network of pipes which are either pressurised to influence the flow of water (rising mains) or via gravity where the fluids flow due to gravitational pull.

B The wastewater is then screened where solid objects such as foods, plastics and wipes are collected and transported to landfill.

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C The fluid is then settled in a tank(s), where then the liquids return to the flow for treatment, but any solids (sludge) is then extracted and can be used for beneficial purposes such as organic soil conditioner.

D The fluid then enters basins which increases the oxygen levels, which helps separate micro organisms such as phosphorous which is then removed from the effluent.

E The fluid then goes through a further separation/clarifier process that separates out other materials which are then recycled.

F The treated Water then goes through a series of filters, which removes any remaining solids but allows the treated water to pass.

Before the treated water is released into the water stream it is purified typically by passing through a UV light.

Feeder pipes

LargeDiameter™

Large Diameter fittings are extremely versatile and can be fabricated to suit all standard and non standard pipe diameters. Stepped couplings join pipes of different external diameters and flange adaptors can be supplied with flanges drilled to any requirement with working pressures up to 80 bar.

- DN350 to DN4000
- Dedicated
- Flexible

Pipe Materials

Ductile Iron | Cast Iron | Steel | Stainless Steel | PVC | HEP30 | Asbestos Cement | Concrete | ABS

UltraGrip®

Designed to offer a solution to joining plain-ended pipes, the fitting has an end load resistant mechanism, that grips and seals onto a variety of pipe materials. The wide tolerance UltraGrip offers easy transitions from one pipe material to another, making it an ideal solution for pipeline repairs.

- DN40 to DN900
- Wide Tolerance
- Restrained

Pipe Materials

Ductile Iron | Cast Iron | Steel | Asbestos Cement | HEP30 | GRP | PVC | PE | HEP30

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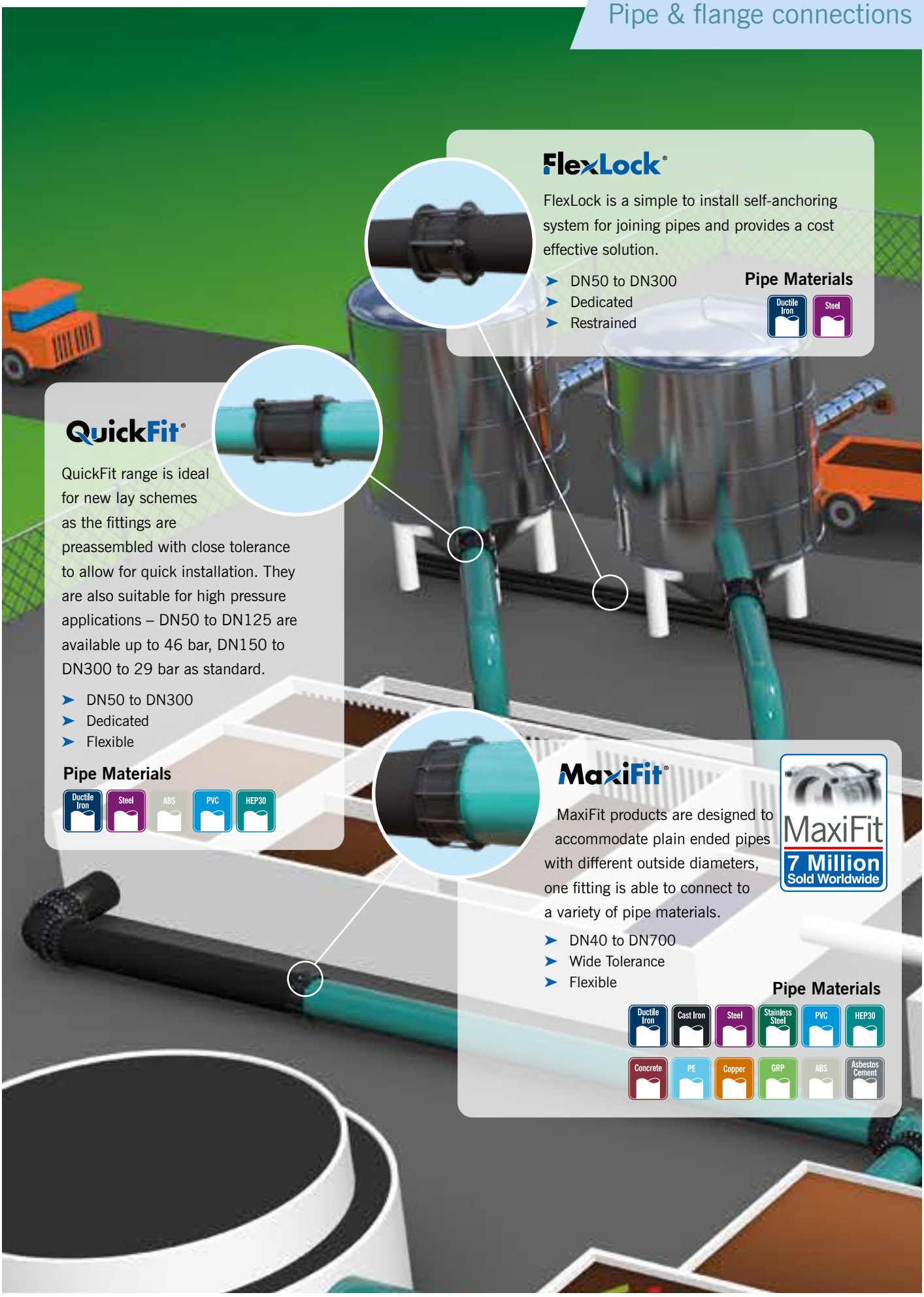

FlexLock®

FlexLock is a simple to install self-anchoring system for joining pipes and provides a cost effective solution.

- DN50 to DN300
- Dedicated
- Restrained

Pipe Materials

Ductile Iron | Steel

QuickFit®

QuickFit range is ideal for new lay schemes as the fittings are preassembled with close tolerance to allow for quick installation. They are also suitable for high pressure applications – DN50 to DN125 are available up to 46 bar, DN150 to DN300 to 29 bar as standard.

- DN50 to DN300
- Dedicated
- Flexible

Pipe Materials

Ductile Iron | Steel | ABS | PVC | HEP30

MaxiFit®

MaxiFit products are designed to accommodate plain ended pipes with different outside diameters, one fitting is able to connect to a variety of pipe materials.

MaxiFit 7 Million Sold Worldwide

- DN40 to DN700
- Wide Tolerance
- Flexible

Pipe Materials

Ductile Iron | Cast Iron | Steel | Stainless Steel | PVC | HEP30

Concrete | PE | Copper | GRP | ABS | Asbestos Cement

Wall inlet/outlet connections

WallCouplings™

Wall Couplings are held rigidly between the shutters, therefore removing the need for 'boxing out'.

It also guarantees that leak paths, which are inevitably created when new concrete is poured onto old, are completely eliminated.

- DN80 and greater
- Dedicated

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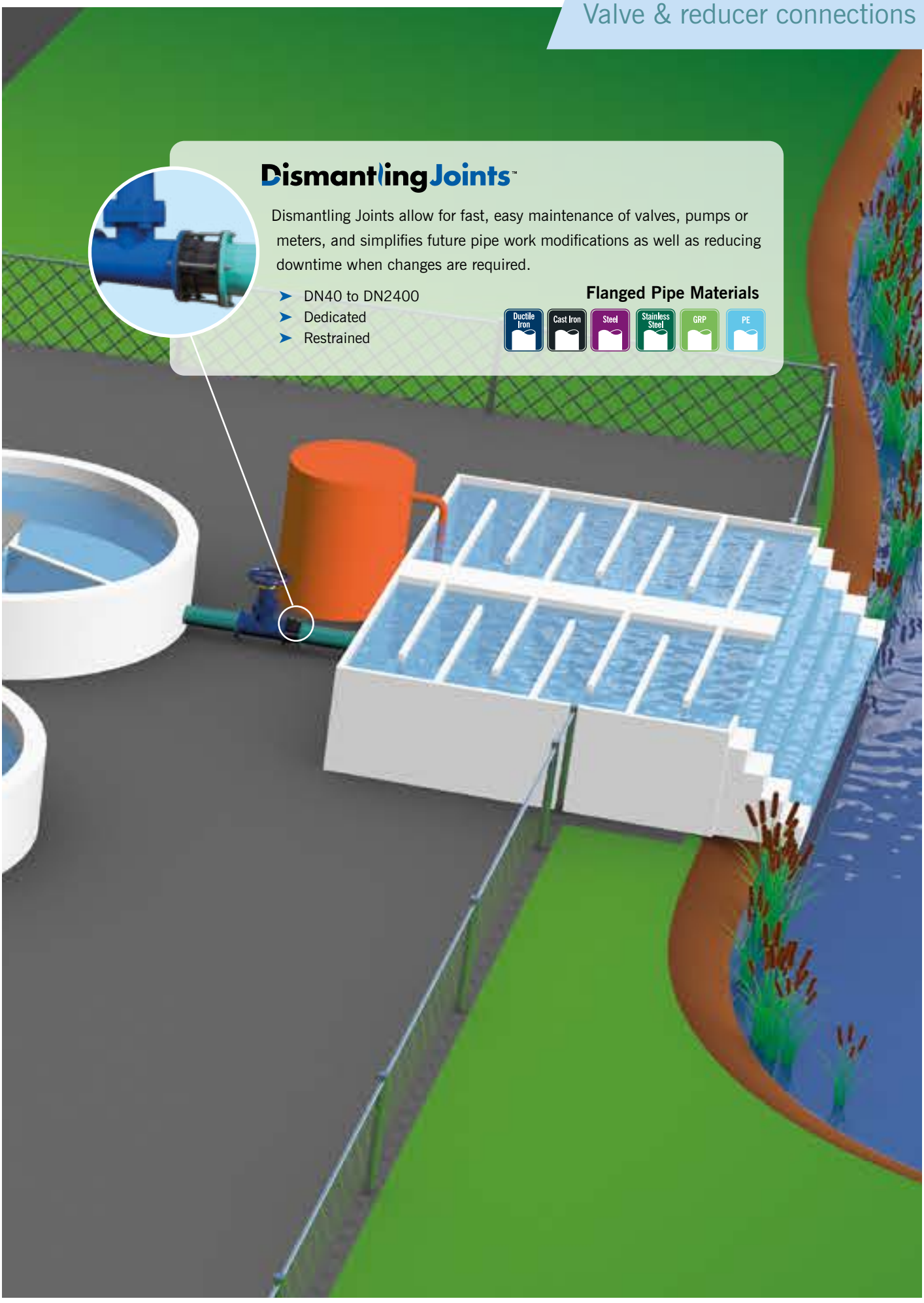

DismantlingJoints™

Dismantling Joints allow for fast, easy maintenance of valves, pumps or meters, and simplifies future pipe work modifications as well as reducing downtime when changes are required.

- DN40 to DN2400
- Dedicated
- Restrained

Flanged Pipe Materials

Ductile Iron | Cast Iron | Steel | Stainless Steel | GRP | PE

A range of coatings and gasket options for a range of applications applications.

Rilsan Nylon 11

As standard Viking Johnson products are coated in Rilsan Nylon, but other options are available dependant on requirement.

Rilsan Nylon 11 is a thermoplastic polyamide powder coating produced from a renewable raw material of plant origin (Castor Oil). Applied by dipping in a fluidised bed, it forms a durable protection with excellent resistance to impact, abrasion, weathering, many chemicals and with good thermal stability and flexibility. Rilsan Nylon 11 provides all the corrosion protection you need for the majority of buried and above ground service applications and eliminates the need for any further protection, such as on-site wrapping. For specific chemical resistance information, please check the chemical resistance chart at the end of the section, or ask for specific recommendations.

RILSAN®

Rilsan Nylon 11 is both WRAS and DWI approved, is suitable for use with potable water and has a maximum operating temperature rating of 90°C (195°F) for water service.

Site repair of localised surface damage, e.g. through careless handling, is straightforward using the special two-pack repair kit.

Many Viking Johnson products are supplied with this protection as standard. Rilsan Nylon 11 Black meets the requirements of WIS 4-52-01 Part 1 and EN 10310 and is our standard Rilsan coating colour, since this provides the optimum resistance to sunlight exposure during storage and provides a responsible coating solution that also helps to protect the environment.

Rilsan Nylon, a bio sourced coating, manufactured from a renewable raw material of castor seeds, that grows easily in semi-arid regions, causing no deforestation and does not compete with food production, making it a truly renewable material.

Manufactured from renewable sustainable castor oil plant

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Fusion Bonded Epoxy (FBE)

Many Viking Johnson products may be specified with FBE coatings which are thermosetting compounds and offer excellent corrosion protection and resistance to a wide range of organic and inorganic chemicals. Many may be used in contact with potable water. FBE coatings generally offer good resistance to soil compaction and cathodic disbondment. Continuous maximum temperature capability of 90°C (195°F) on water service. Site repair is possible using special repair packs.

Galvanising

A hot dip process giving a zinc coating in conformity with BS EN ISO 1461. Certain Viking Johnson products may be specified with this coating. Other specialist coatings can be supplied according to customer requirements.

Fasteners

Fasteners are manufactured from either mild or stainless steel, with different material grades available depending on product and market/application. Fasteners are coated in one of the following corrosion-protection and lubrication systems.

Sheraplex	Low friction compound coating based on sheradising and fluoropolymer
Galvanised	Metallic zinc coating
Flurene 177	Low friction coating, mainly used for AquaGrip and EasiTee products
Delta Seal GZ – Silver	Anti-galling organic coating for Stainless Steel nuts

Stainless Steel Bolts may be supplied in either grade 304 or 316 stainless steel.

EPDM & Nitrile Gaskets available

Grade E	Ethylene Propylene (EPDM) BS EN 681-1 WRAS approved.
Colour flash:	Green
Temperature range:	-40C to + 90C (-40F to 195F) - (Note 1)
Suitable for:	Potable water, sewage, many strong and oxidising chemicals, some food applications
NOT suitable for:	Gas petroleum products, oily compressed air or hydrocarbon fuels and lubricants.

Grade G	Nitrile (NBR) BS EN 682 Type G.
Colour flash:	Silver
Temperature range:	-20C to + 100C (-4F to 212F) - (Note 1)
Suitable for:	Natural gas, petroleum products, low aromatic fuels (generally <30% aromatic content), oily compressed air and sewage applications
NOT suitable for:	Potable water.

Specialist gaskets – available on request for dedicated and QuickFit coupling range only.

Solutions for Wastewater applications

CHEMICAL COMPOSITION	GASKET / GRADE	RILSAN	FBE	CHEMICAL COMPOSITION	GASKET / GRADE	RILSAN	FBE
Acetic Acid, up to 10%	E,G,V	✓	✓	Hydrogen, Gas	E, G, V	✓	✓
Acetone	E	✓	✓	Hydrogen Sulphide	E, V	✓	✓
Acetylene	E,G	?	?	Kerosene	G, A, O	✓	✓
Air, oil free	E,G	✓	✓	Ketones	E	✓	✓
Air, oily	G, A	✓	✓	Lubricating Oil, Refined	G, O	✓	✓
Alcohol - butyl, ethyl, methyl	E, G	✓	✓	Methane	G, A, O	✓	✓
Aluminium Hydroxide	E	✓	?	Methyl Ethyl Ketone	E	✓	✓
Alums, all types	E, G, V	✓	✓	Mineral Oils	G	✓	✓
Ammonia Gas, cold	E, G, V	✓	✓	Naphtha	O	✓	✓
Ammonium Bicarbonate	E, G	✓	✓	Natural Gas	G	✓	✓
Ammonium Nitrate	E, G	✓	✓	Nitric Acid, to 10%	E	?	✓
Animal Oils/Fats	G	✓	✓	Nitrogen	E, G, V	✓	✓
Aviation Fuel	G, C, O	✓	✓	Oil, Crude Sour	G, O	✓	✓
Benzene	O	✓	✓	Oxygen	E	✓	✓
Blast Furnace Gas	O	?	?	Ozone	E	✓	✓
Bleach Solutions	E	✓	✓	Petroleum Oils	G, O	✓	✓
Brine	E, G, V	✓	✓	Phenol (Carbolic Acid)	O	✓	✓
Butane Gas	G, V	✓	✓	Polyvinyl Acetate	E	✓	✓
Calcium Chloride	E, G, V	✓	✓	Potassium Chloride	E, G, V	✓	✓
Calcium Hydroxide	E, G, V	✓	✓	Potassium Hydroxide	E, V	✓	✓
Calcium Hypochlorite (Bleach)	E	✓	✓	Potassium Permanganate	G	?	?
Carbon Tetrachloride	O	?	✓	Propane Gas	T	✓	✓
Caustic Soda	E, V, G	✓	✓	Sewage	E, G, V	✓	✓
Chlorine (dry)	E	?	?	Sodium Bicarbonate	E, G, V	✓	✓
Coke Oven Gas	G, O	?	?	Sodium Carbonate	E	✓	✓
Copper Sulphate	E, G, V	✓	✓	Sodium Chloride	E, G, V	✓	✓
De-ionised Water	E, G, V	✓	✓	Sodium Hydroxide, to 50%	E, V	✓	✓
Detergents	E, G, V	✓	✓	Sodium Hypochlorite, to 20%	E, G	✓	✓
Developing Fluids	G, V	?	?	Styrene	O	✓	?
Diesel Oil	G, O	✓	✓	Sulphuric Acid, to 25%, 66°C (150°F)	E	✓ (10%)	✓
Ethane	G	✓	✓	Toluene	O	✓	✓
Ethylene	G, O	✓	✓	Turpentine	G	✓	✓
Ethylene Glycol	E, G, V	✓	✓	Vegetable Oils	E, G	✓	✓
Fuel Oil	G, O	✓	✓	Vinyl Acetate	E	?	?
Gasoline, Leaded & Unleaded (<30% aromatics)	G, O	✓	✓	Vinyl Chloride	O	?	?
Glycerine (Glycerol)	E, G, V	✓	✓	Water, to 90°C (195°F)	E	✓	✓
Glycols	E, G, V	✓	✓	Water, Potable	E	✓	✓
Hexane	G, O	✓	✓	Water - Waste, Seawater	E, G, V	✓	✓
Hydrochloric Acid, Cold to 50%	E, O	?	✓	White Spirit	G	✓	✓

For advice on any chemical not listed here, please contact Viking Johnson for further details

✓ *Good Resistance* ? *Contact* Viking Johnson *for further advice*

Key: E = EPDM, G = Nitrile (NBR), V = Polychloroprene, C = Epichlorhydrin, A = Polyacrylic, O = Fluoroelastomer, L = Silicone

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United Kingdom - Blackburn

Hyndburn Wastewater Treatment Plant

QuickFit - DN150

Project

QuickFits are installed on the transfer pipework to the pumping station and the perforated basket screens, at Hyndburn Wastewater Treatment Plant, which serves a population of 114,000 in the Great Harwood area of Blackburn.
A recent extension to the plant aims to increase the capacity of effluent treated each day.

Client

United Utilities

Contractor

Valves & Engineered Products

RAPID SERVICE

NEW

Finished goods available ex-stock from Viking Johnson for your emergency repair requirements up to DN800, contact your official VJ partner now.

UltraGrip® | EasiRange | MaxiFit

Service Details

- Mon-Thur 08.30-17.00 Friday 08.30-12.30
- Latest order time for processing is 15.00 Mon-Thur and Friday 12.30
- Deliveries can be scheduled for same day, or to arrive at site next working day
- Orders can be collected from Crane Northampton site, with latest collection time 16.00 Mon-Thur and 15.00 Friday
- All orders will be subjected to a premium service charge
- Delivery terms are based on delivery only an no offloading
- Please enquire for any site specific requirements
- Customer is responsible for offloading unless otherwise agreed
- Quotes and transactions will be handled by your preferred supplier
- All Rapid Service sales are subject to VJ standard terms and conditions

For further information in regards to Rapid Service you can contact Viking Johnson direct

e: rapidservice@cranebsu.com

tel: 01462 510444

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ISO 14001 Environmental Management — EMS 553775

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BS EN 14525 Ductile Iron Couplings & Flange Adaptors*
VC 669122
VC 673979

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YouTube To visit our Video Library go to: www.youtube.com/user/CraneBSU

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