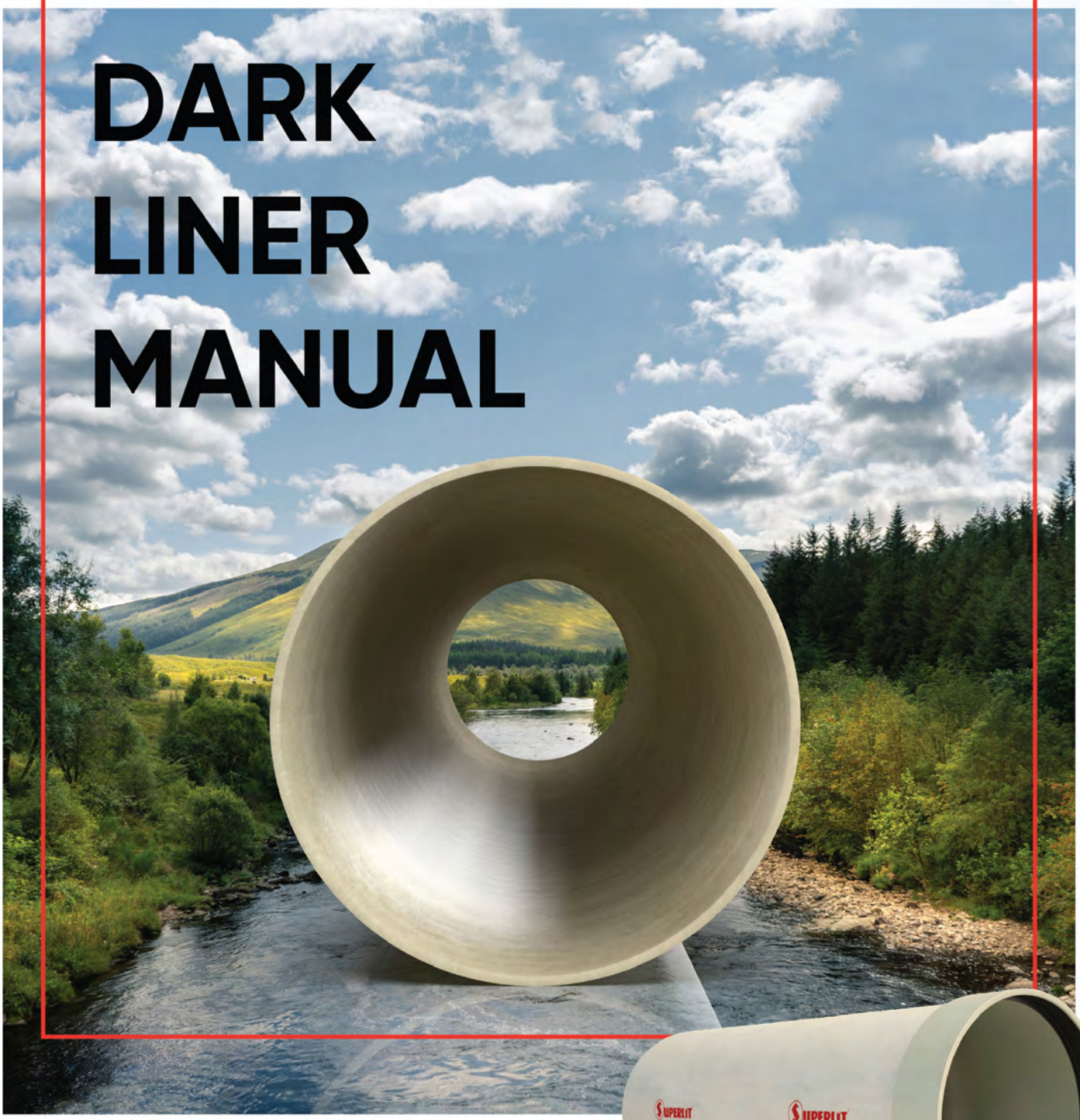
SUPERLIT®

DARK LINER MANUAL



65+ years

COMPANY PROFILE

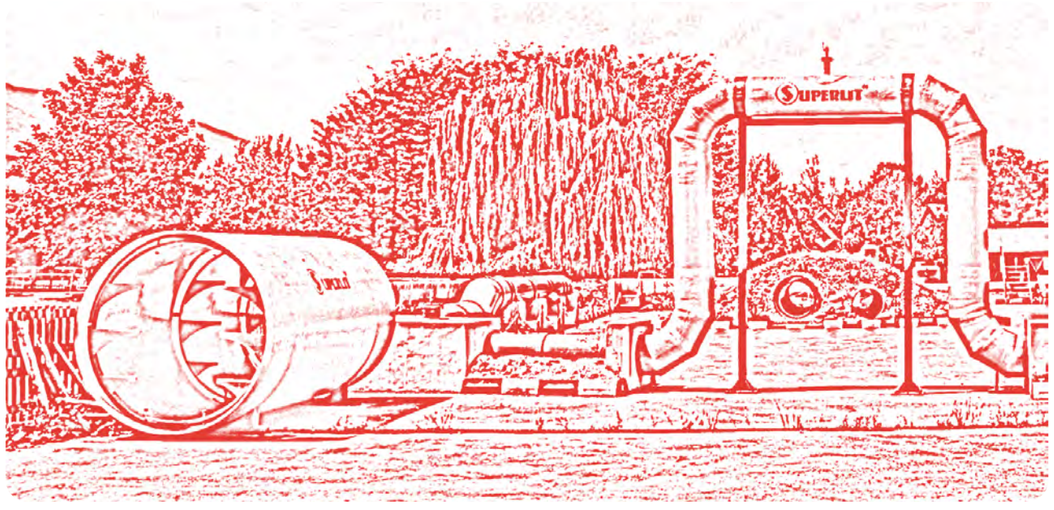
SUPERLIT Group Manufacturing Facilities belongs to the KARAMANCI HOLDING established in 1961. Since the beginning of the sixties SUPERLIT has been present in Türkiye market and an international market as a leader of pipe manufacturer supplying their products to 5 continents worldwide.

Superlit GRP products made using the Filament Continues Winding and Helical Discontinues Winding technologies covering diameter range of DN50- DN4000 mm, with a stifness of 1250, 2500, 5000, 10000 Nominal Pressure Class is 1 – 32 bars and for special design is much higher for both SN & PN.

The Products are corrosion resistant, chemical resistant, and high-resistant in water and sewage applications and light in weight used in the following applications: clean water and potable water, irrigation, hydroelectric power plant, sewer system, stormwater, water treatment, seawater intake and discharge, jacking & trenchless technologies, water and oil storage tanks, industrial applications such as thermal&nuclear power plants, desalination plants, petrochemical plants etc.

The entire products produce by SUPERLIT are also simple to handle and are manufactured to a high quality in accordance to an international standards such as EN, ISO, ASTM and AWWA. SUPERLIT is the only GRP pipe manufacturer in Türkiye that has 3 different pipe production technologies: Continuous Filament Winding, Centrifugal Casting technology and Helical Filament Winding.

Integrated Management Systems Certificates (ISO 9001, ISO 14001 & ISO 45001) have been granted by the internationally recognized and reputable independent organizations. Being one of the world's leading manufacturers in the pipe industry with an experience of more than half century, SUPERLIT supplies pipes for projects in many different regions around the world from Europe to Africa and from America to Asia and Australia.



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1. DARK LINER GRP PIPE

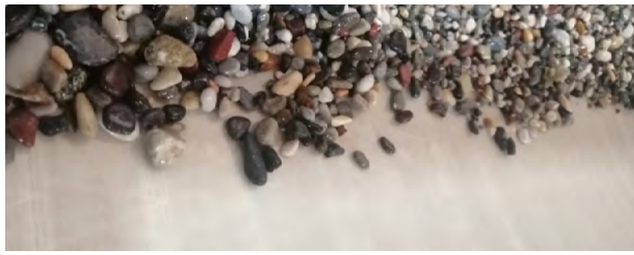
Superlit Dark Liner, one of the latest developed products of Superlit Pipe, provides superior pipe properties with its improved design, production method and materials. This newly developed product provides great advantages in terms of high impact resistance, abrasion resistance, water jet resistance and chemical resistance. This new and improved product with a special liner layer, which has emerged as a result of Superlit's experience gained over 60 years, shows additional resistance to water containing abrasives. By this means, products with longer service life can be offered to designers.



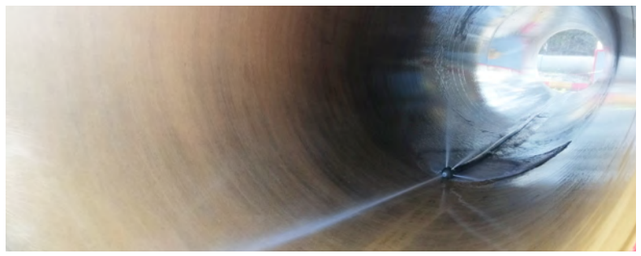
2. THE BENEFITS OF SUPERLIT DARK LINER



HIGHER LEVEL OF IMPACT RESISTANCE



HIGHER LEVEL OF ABRASION RESISTANCE



HIGHER LEVEL OF WATER JET RESISTANCE

HIGHER LEVEL OF CHEMICAL RESISTANCE





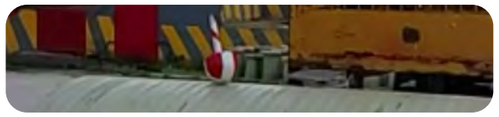
3. HIGHER LEVEL OF IMPACT RESISTANCE

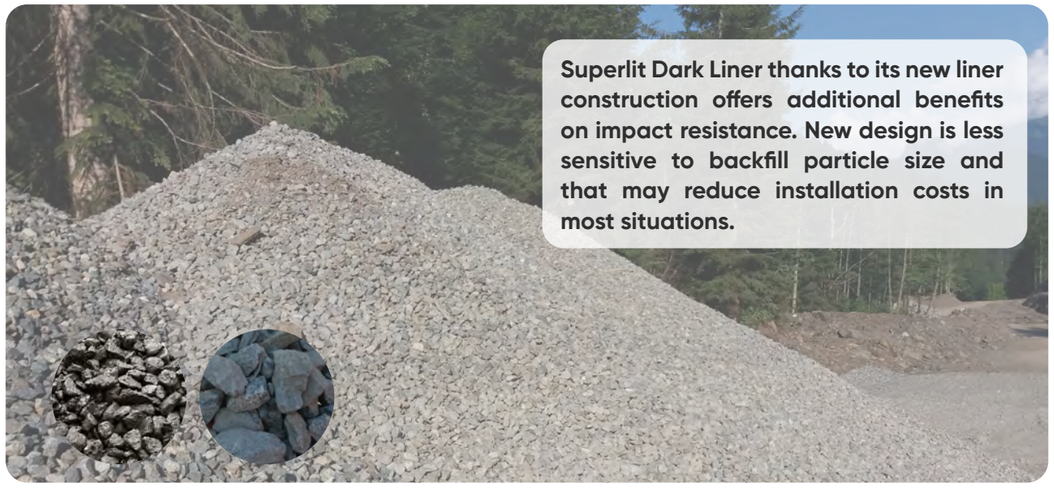
Superlit products have a wide range of uses in the local market and are exported to more than 60 countries. From just after the production till the operation stage, pipes can be subjected to unintentionally impacts effects, especially during transportation, handling, storage and installation.



As a consequence of this impact effect, pipe's structural integrity can be damaged and may cause an inner liner cracking and/ or delamination of pipe layers.

Impact resistance measurement is carried out on the pipe subjected to impact by a striker of a specified mass and shape (according to BS 5480) falling vertically from various heights. The pipes tested are inspected visually for damage and finalized with a pressure test to ensure the performance of the product.





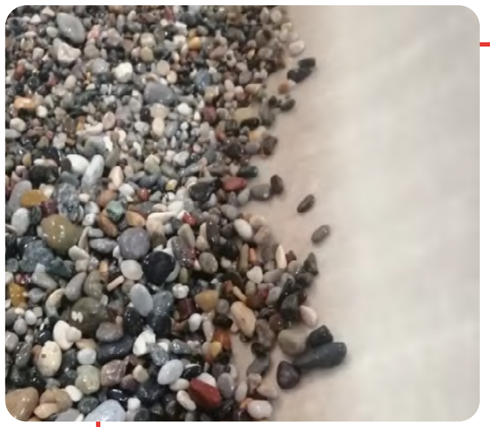
Superlit Dark Liner thanks to its new liner construction offers additional benefits on impact resistance. New design is less sensitive to backfill particle size and that may reduce installation costs in most situations.

4. HIGHER LEVEL OF ABRASION RESISTANCE

Abrasion Resistance

Abrasion resistance shows the strength of the pipe liner against the attacks of aggressive substances within the fluid. The parameters affecting the level of abrasions the flow velocity, type and shape of abrasive particles inside fluid, percentage and particle size of solid contents.





The Superlit products which are complied with TS EN ISO 23856 are already proper choice for sewage or drainage system. In rare cases where abrasion level is critical such as industrial applications, chemical pipe lines, and the lines which transport fluid with abrasive materials, Superlit Dark Liner offers the solution with its increased safety factor regarding to special liner construction.

According to the tests carried out in Superlit Laboratories, Superlit Dark Liner has excellent abrasion resistance.

Abrasion resistance has an importance for many pipe installations when the water transported in the pipe at higher velocity (storm water/rain water) and contains aggressive materials. When abrasive particles are present in fluid, erosion and abrasion wear can occur that may eventually compromise structural integrity and necessitate repair or rehabilitation.

The new pipe design from Superlit provides higher abrasion resistance for water and sewage applications.

Superlit proposes alternative new developed liner design which has superior characteristics compare with standard products. This new design's abrasion performance is tested in Superlit R&D Laboratories following the procedure of Darmstadt rocker test. As a result of this test; the estimated abrasion loss for 100.000 cycles is 0,10 mm.

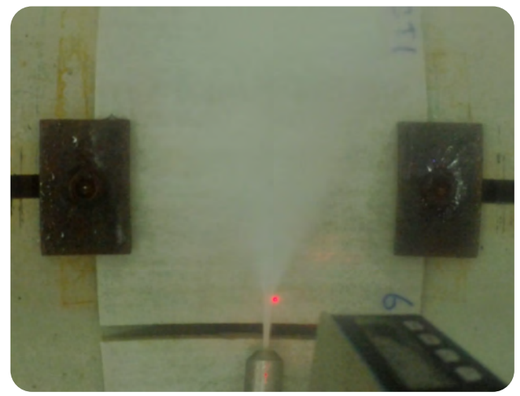
This excellent level of abrasion resistance is unique in the market that can meet projects' utmost abrasion requirements.



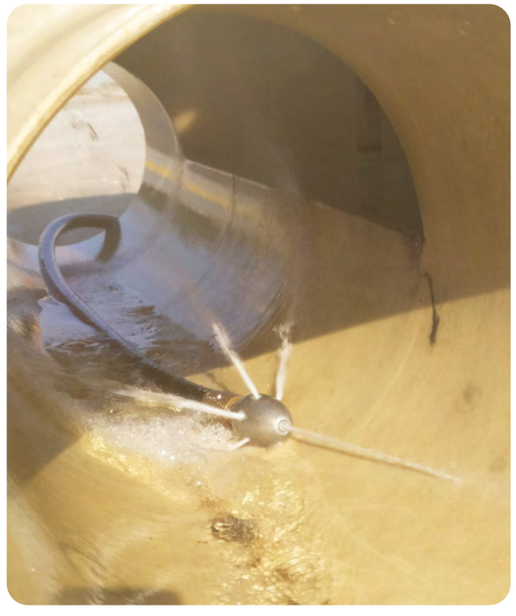
Darmstadt Rocker Test

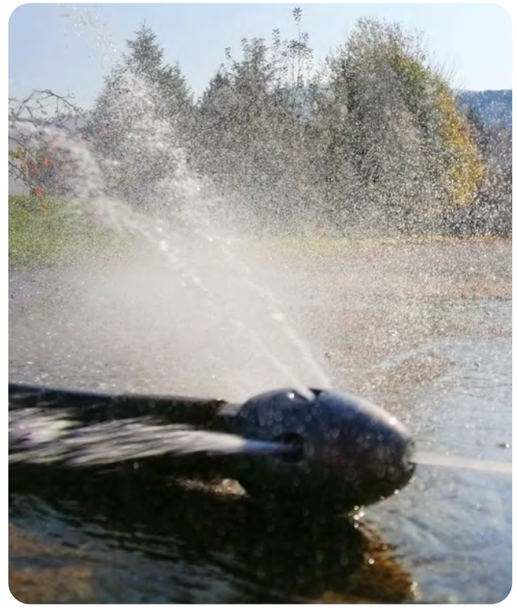
5. HIGHER LEVEL OF WATER JET RESISTANCE

High pressure water jet is a common methodology to clean residues on pipe inside surface may occured by environmental conditions during operations.



Water Jet Cleaning is a frequent operation when pipe installation is completed. It can also be made periodically while lines are in use. Superlit Dark Liner provides exceptional resistance for this purpose. The performance of the pipe is confirmed by following the procedure of DIN19523 Clause 4.2





6. HIGHER LEVEL OF CHEMICAL RESISTANCE



Superlit GRP Pipes have a very high corrosion resistance.

The corrosion resistance of the pipe depends on resin type, thickness of liner and liner composition. Pipe design parameters are determined considering the temperature of the media and the concentration of the chemical content conveyed in the pipeline.

Standard GRP pipes are well-known for the chemical resistance with elevated temperatures. For the projects that require extreme chemical and temperature conditions, Superlit Dark Liner provides solution with its superior features.



7. CHEMICAL RESISTANCE GUIDE

CHEMICAL	STANDARD	SPECIAL
Acetic Acid		x
Acrylic Acid		x
Alcohol Ethyl	x	x
Alcohol Isopropyl	x	x
Alcohol Methyl Isobutyl		x
Alcohol Secondary Butyl		x
Alun	x	x
Aluminium Chloride	x	x
Aluminium Flouride	x	x
Aluminium Hydroxide		x
Aluminium Nitrate	x	x
Aluminium Potassium Sulfate	x	x
Ammonia Aqueous		x
Ammonia Gas		x
Ammonium Bicarbonate		x
Ammonium Bisulfate		x
Ammonium Carbonate		x
Ammonium Chloride	x	x
Ammonium Citrate		x
Ammonium Flouride		x
Ammonium Hydroxide		x
Ammonium Nitrate	x	x
Ammonium Persulfate		x
Ammonium Phosphate	x	x

CHEMICAL	STANDARD	SPECIAL
Ammonium Sulfate	x	x
Analine Sulfate		x
Barium Carbonate		x
Barium Chloride	x	x
Barium Hydroxide		x
Barium Sulphate	x	x
Beer	x	x
Benzine Sulphonic Acid		x
Benzoic Acid		x
Cadium Chloride		x
Calcium Bisulfite		x
Calcium Carbonate		x
Calcium Chlorate		x
Calcium Chloride	x	x
Calcium Hydroxide		x
Calcium Nitrate	x	x
Calcium Sulfate	x	x
Calcium Sulfite		x
Cane Sugar Liquid		x
Caprylic Acid		x
Carbon Dioxide	x	x
Carbon Monoxide, gas form	x	x
Chlorine, Dry gas		x
Chlorine, wet gas		x
Citric Acid	x	x
Copper Chloride	x	x
Copper Cyanide		x
Copper Flouride		x
Copper N traie:	x	x
Copper Sulphate	x	x

CHEMICAL	STANDARD	SPECIAL
Crude Oil, sour	x	x
Crude Oil, sweet	x	x
Diesel Fuel	x	x
Ethylene Glycol	x	x
Ferric Chloride	x	x
Ferric Nitrate	x	x
Ferric Sulphate	x	x
Ferrous Chloride	x	x
Ferrous Nitrate	x	x
Ferrous Sulphate	x	x
Flobonic Acid	x	x
Fluosilicic Acid	x	x
Formic Acid	x	x
Fuel Oil	x	x
Gas, natural		x
Gluconic Acid		x
Glucose	x	x
Glycerine	x	x
Heptane		x
Hexane		x
Hexylene Clycol		x
Hydraulic Fluid		x
HydrohSoric Acid		x
Hydroyanid Acid		x
Hydrofluosilicic Acid		x
Hydrogen Bronide, wet gas		x
Hydrogen Chloride, dry gas		x
Hydrogen Chloride, wet gas		x
Hydrogen Sulfide, liquid	x	x
Hydrogen Flouride, vapour		x

CHEMICAL	STANDARD	SPECIAL
Hydrosulfide Bleach		x
Hydrochlorous Acid		x
Isopropyl Amine		x
Isopropyl Palmitate		x
Kerosene		x
Lactic Acid		x
Laurel Chloride		x
Laurie Acid		x
Lead Acetate		x
Chlorine, dry gas		x
Lithium Bromide		x
Lithium Sulfate		x
Magnesium Bisulfit		x
Magnesium Carbonate		x
Magnesium Chloride	x	x
Magnesium Hydroxide		x
Magnesium Sulfate	x	x
Maelic Acid		x
Mercuric Chloride	x	x
Mercurous Chloride	x	x
Mineral Oils	x	x
Motor Oil		x
Myristic Acid		x
Naptha		x
Napthalene		x
Nickel Chloride	x	x
Nickel Nitrate	x	x
Nickel Sulfate	x	x
Octanoic Acid		x
Oleic Acid		x
Oxalic Acid		x

CHEMICAL	STANDARD	SPECIAL
Phosphoric Acid		x
Phosphorous Pentoxide	x	x
Phtalic Acid		x
Potassium Alum Sulfate		x
Potassium Bicarbonate	x	x
Potassium Bromide		x
Potassium Carbonate	x	x
Potassium Chloride		x
Potassium Dichromate	x	x
Potassium Ferrocyanid		x
Potassium Hydroxide		x
Potassium Nitrate		x
Potassium Persulfate	x	x
Potassium Sulphate		x
Propylene Glycol	x	x
Salicylic Acid		x
Sebacic Acid		x
Soaps		x
Levulinic Acid	x	x
Sodium Acetate		x
Sodium Aluminate		x
Sodium Benzoate		x
Sodium Bicarbonate		x
Sodium Biflouride		x
Sodium Bisulfate		x
Sodium Bisulfite	x	x
Sodium Bromide	x	x
Sodium Chlorate	x	x
Sodium Chloride		x
Sodium Chlorite	x	x
Sodium Chromate		x

CHEMICAL	STANDARD	SPECIAL
Perchloretylene		x
Sodium Cyanide		x
Sodium Dichromate		x
Sodium Diphosphate		x
Sodium Ferricyanide		x
Sodium Ferrocyanide		x
Sodium Flouride		x
Sodium Flouro Silicate		x
Sodium Laryl Sulfate		x
Sodium Nitrate	x	x
Sodium Nitrite	x	x
Sodium Silicate		x
Sodium Sulfate	x	x
Sodium Sulfide		x
Sodium Sulfite	x	x
Stannic Chloride		x
Stearic Acid	x	x
Sugar Cane Liquor		x
Sulfuric Acid	x	x
Tartaric Acid		x
Trichlor Acetic Acid		x
Trisodium Phosphate		x
Vegetable Oils	x	x
Vinegar	x	x
Water, demineralised	x	x
Water, distilled	x	x
Water, fresh	x	x
Water, sea	x	x
Zinc Chlorate		x

8. INTERNATIONAL STANDARDS

Water Supply

- TS EN ISO 23856
- ASTM D3517
- AWWA C950
- EN 1796

Clean Water Applications

- TS EN ISO 23856
- ISO 10639
- AS 3571.2

Waste Water Applications

- TS EN ISO 23856
- EN 14364
- ASTM D3262
- ASTM D3754
- ISO 10467
- AS 3571.1

Design & Installation

- AWWA M45
- ISO 10465
- AS/NZS 2566.2
- ASTM D3839



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GRP
DARK LINER



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