

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Plastic Pipes, Thermoplastic**

with type designation(s)

Durapipe Superflo PN 10 ABS Metric Pipes & Fittings

Issued to

Durapipe UK**CANNOCK, STAFFORDSHIRE, United Kingdom**

is found to comply with

DNV GL rules for classification – Ships**DNV GL class programme CP-0072 – Type Approval of non-metallic materials – Thermoplastic piping systems****Application :**

For use in systems for water and sea water up to 10 bar. Service temperature 0°C to 70°C, max. 95°C for shorter intervals. For installation according to DNV GL Rules and Manufacturer's Specifications. The piping system is approved to Low Flame Spread according to ASTM D635. The piping system is not tested w.r.t. Fire Endurance characteristics.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **2021-01-21**.Issued at **Høvik** on **2016-01-22**DNV GL local station: **Manchester**Approval Engineer: **Mats Gustafsson**for **DNV GL**

Martin Strande
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

Durapipe Superflo PN 10 ABS Metric Pipes & Fittings

For conveyance of a wide range of fluids including treated and untreated effluent, cooling water, chilled water, sea water, potable water and ultra-pure water.

Pipes (PN 10):

Outside diameters and minimum wall thickness										
OD [mm]	16	20	25	32	40	50	63	75	90	110
t [mm]	1,4	1,5	1,8	2,0	2,5	3,2	4,0	4,7	5,7	6,9

Outside diameters and minimum wall thickness							
OD [mm]	125	140	160	200	225	250	315
t [mm]	7,9	8,8	10,0	12,5	14,1	15,7	19,7

Fittings (PN 10):

Sockets, Reducers, Elbows, Bends, Tees (equal, reducing and plain, including 45° Y-tees) and Caps

Mechanical Slip Coupler (PN 8):

ABS sleeve or coupler, EPDM O-rings, Aluminium clamps, Zinc passivated nut and bolt.
Coupler size: 75, 90 and 110 mm

Permissible working pressure in relation to internal and external temperatures:

Pipes and fittings (PN 10):

Nominal Pressure	Permissible working pressure [bar]				
	20°C	30°C	40°C	50°C	60°C
PN 10	10	8,4	6,8	5,1	3,5

Mechanical Slip Coupler (PN 8):

Nominal Pressure	Permissible working pressure [bar]				
	20°C	30°C	40°C	50°C	60°C
PN 8	8	6,7	5,4	4	2,8

Manufactured by

GPS PE Pipe Systems, St Peters Road, Huntingdon, Cambridgeshire, PE29 7DA (Pipes)

DHM Plastics Ltd, Dickley Lane, Lenham, Maidstone, Kent, ME17 2DE (Fittings)

DNV GL local office: Manchester

Responsibility

The Company (stated on the front page of this Certificate) takes the responsibility that both design and production are in compliance with Rules, Standards and/or Regulations listed on page 1 of this certificate.

Application/Limitation

For installation according to DNV GL Rules and Manufacturer's Specification.

The approval covers application such as non-essential system, hot and cold water systems chilled and brine water systems, cooling systems (air condition), osmosis systems and evaporation, fresh water bunker lines, etc. and may be used in locations not restricted by Fire Endurance requirements.

Maximum service pressure 10 bar. Service temperature range 0°C to 70°C, max. 95 °C for shorter intervals.

Not for use in systems subject to any external pressure.

The piping system is approved to Low Flame Spread, according to ASTM D635-06 (accepted as an alternative to IMO Resolution A.653(16)).

The piping system is not tested with respect to Fire Endurance characteristics.

The pipes and fittings are non-conductive.

The approval does not include valves.

Design and installation are to be carried out in accordance with Durapipe technical instructions.

Type Approval documentation

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

Marking of product

The product is to be marked with the:

- manufacturer's name: **Durapipe**
- place of manufacturer/logo
- product name (grade): **Durapipe Superflo**
- pressure rating - nominal
- design pressure
- temperature rating.

The marking is to be carried out in such a way that it is visible, legible and indelible. The product name shall be the same as stated on the DNV GL Type Approval Certificate

Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical Assessment to be performed after 2.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Periodical Assessment are to:

- Ensure that **Type Approval documentation** is available.
- Review design, materials, production process, and performance with respect to possible changes, in order to ensure compliance with **Type Approval documentation** and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and the DNV GL Type Approval Certificate.



Job Id: **262.1-011910-2**
Certificate No: **TAK000007S**

END OF CERTIFICATE