



Certificate no.:
TAK00002JD

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Plastic Piping System, Thermoplastic**

with type designation(s)
PVC-U PN10 and PN16 Pipes and Fittings

issued to

Xiamen Sanideng Plastics Industry Co., Ltd.
Xiamen City, Fujian Province, China

is found to comply with

DNV class programme DNV-CP-0072 – Type approval – Thermoplastic piping systems
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems

Application:

Non-essential systems.

External pressure rating: 1.0 bar.

For use in systems for water up to 16 bar.

Service temperature 0°C to 60°C.

For installation according to DNV Rules and Manufacturer's recommendations.

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

Issued at **Hamburg** on **2025-12-04**

This Certificate is valid until **2030-12-03**.

for **DNV**

DNV local unit: **China South NB**

Approval Engineer: **Joachim Rehbein**

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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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

PVC-U Pipes and Fittings: Unplasticized polyvinyl chloride (PVC-U)

Pipes:

Nominal outside diameter DN [mm]	Pipe series S and standard dimension ratio SDR	
	S10 SDR21	S6.3 SDR13.6
	Nominal pressure [bar]	
	PN10	PN16
	Minimum wall thickness [mm]	
20	2.0	2.0
25	2.0	2.0
32	2.0	2.4
40	2.0	3.0
50	2.4	3.7
63	3.0	4.7
75	3.6	5.6
90	4.3	6.7
110	5.3	8.1
140	6.7	10.3
160	7.7	11.8
225	10.8	16.6
250	11.9	18.4
280	13.4	20.6
315	15.0	23.2

Notes:

PN class based on internal pressure – short term tests for pipe with SF 4.0

Fittings:

Elbows, tees, reducers, flanges, flange adaptors

Joining technique:

Glue bonding

Service parameters

Service temperature range	0°C up to +60°C
Nominal internal pressure	10 bar, 16 bar
Nominal external pressure rating	1.0 bar

Long-term permissible service pressure at lower and elevated temperatures¹

Non-essential systems

Temperature	Pressure class	0°C up to +20°C	30°C	40°C	50°C	60°C
Maximum allowable working pressure (bar)	PN10 (SDR21 / S10)	10.0	7.9	5.9	4.1	2.5
	PN16 (SDR13.6 / S6.3)	16.0	12.9	9.5	6.5	4.0

Notes:

¹ According to manufacturer's information.

Assessed manufacturing site

Xiamen Sanideng Plastics Industry Co., Ltd., No. 169, Tonghong Road, Tong'an District, Xiamen City, Fujian Province, China.

Application/Limitation

Approved only for installation of piping systems onboard ships which will not be exposed to vacuum inside the pipes and not exposed to external pressure outside the pipes.

The plastic piping system is type approved for application in piping systems as listed in "Table 2 - Fire endurance requirements matrix" of DNV-RU-SHIP Pt.4 Ch.6 Sec.2 where "0" is specified:

Item	Piping system ¹	
Freshwater		
22	Non-essential systems	- Potable hot and cold water and bunker lines - Potable water treatment systems (Osmosis and Evaporation) - Chilled water and cooling water of air condition systems
Sanitary and drains and scuppers		
24	Sanitary drains (internal)	- Black and grey water including wastewater treatment and discharge lines to shore

Notes

¹ Approved installation locations where "0" is specified in "Table 2 - Fire endurance requirements matrix".

Appropriate footnotes are to be observed.

Not approved for installation locations where "NA" or "X" is indicated.

Not approved for installation in gas hazardous area.

Extent of Type Tests applicable to piping system dependent on application

Fire Endurance

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

Low Flame Spread

The piping system is not tested with respect to Low Flame Spread characteristics.

Smoke generation and toxicity

The piping system is not tested with respect to smoke or toxic products generation in case of fire as defined in IMO FTP Code, Annex 2 - 2.2.

Electrical conductivity

The piping system is non-conductive, not for installation in gas hazardous area, or used with non-conductive fluids.

Additional remarks

Passenger vessels

For application on passenger vessels additional requirements specified in the Rules and Regulations of the appropriate flag State authority may have to be observed.

Installation

For designing and installation of the piping system the instructions of manufacturer are to be observed.

In addition, the installation requirements specific to the ship as specified by the shipyard as well as DNV-RU-SHIP Pt.4 Ch.6 Sec.9 and 10 are to be observed.

Bulkhead and Deck Penetration

Pipe penetration through watertight bulkheads or decks as well as through fire divisions shall be type approved unless the penetration pipe is welded into the bulkhead/deck.

When plastic pipes pass through watertight bulkheads or decks which are also a fire division, and a fire may cause flooding of watertight compartments, the watertight integrity of the bulkhead or deck is to be maintained by a metallic shut-off valve fitted at the bulkhead or deck. The operation of this valve shall be provided from above the freeboard deck. Refer to DNV-RU-SHIP Pt.4 Ch.6 Sec.3 – 1.4 Fittings on watertight bulkheads.

On passenger vessels, where the watertight bulkhead is also a fire division, the requirements of the SOLAS Chapter II - 1, Regulation 13.2.3 are to be observed.

Type Approval documentation

Tests carried out

Type Testing carried out according to **Type Approval documentation**.

Marking of product

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV Type Approval Certificate.

Product	Scope	Example
Pipes and fittings	Brand	SANKING
	Material grade	UPVC
	Standard	GB/T4219.1
	Dimension OD and nominal wall thickness	63*3
	Pressure rating	S10
	Colour	deep grey
	Manufacturer information/traceability code	-

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 assessments (for Certificate Retention / Certificate Renewal) shall be performed according to DNV-CP-0338.

This certificate is only valid if required Periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

END OF CERTIFICATE