



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **K-5559**

Holder of Certificate
IPEX Management Inc.
Verdun QC, Canada

This is to certify that the
Plastic Pipes, Thermoplastic

with type designation(s)
Xirtec®140 (PVC) Sch 80 Pipes and Fittings

is found to comply with
Det Norske Veritas' Rules for Classification of Ships
Det Norske Veritas' Type Approval Programme 1-501.2, 2011, Thermoplastic Pipes

Application


For use in non-essential and essential systems for water. Service temperature 0°C to 60°C. For installation according to DNV Rules and Manufacturer's Specifications. The piping system is not tested w.r.t. Fire Endurance. The piping system is not tested w.r.t. Low Flame Spread.

Høvik, 2013-05-24
for **Det Norske Veritas AS**

This Certificate is valid until
2017-06-30


Lars André Moen
Head of Section

DNV local office:
Montreal


Helene Bjerke
Surveyor

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.



Certificate No.: K-5559
File No.: 332.31
Job Id.: 262.1-014865-1

Product description

Xirtec®140 (PVC) Sch 80 Pipes and Fittings. (PVC: Polyvinyl Chloride)

Dimensions: OD ½" - 8 "

Pipes Sch 80 :

Pipe and fittings											
NPS (inch)	½	¾	1	1-¼	1-½	2	2-½	3	4	6	8
OD [mm]	21.27	26.62	33.33	42.10	48.17	60.23	72.88	88.70	114.10	168.00	218.70
t [mm]	3.72	3.90	4.54	4.84	5.08	5.54	7.00	7.62	8.56	11.0	12.70
PN (psi)	680	550	505	415	375	320	340	275	260	220	195
PN (bar)	46.8	37.9	34.8	28.6	25.8	22.0	23.4	18.9	17.9	15.1	13.4

Fittings:

Tees, elbows, couplings, reducers, bushings, caps and flanges.

Note that when flanges are used the piping system shall be derated to 150 psi (10 bar).

Manufacturers of fittings:

IPEX USA LLC, P.O. Box 240696-0696, Charlotte NC 28224

IPEX Inc., 11 Bermondsey Road, East York, ON, Canada, M4B 1Z3

IPEX Inc, 1055 Wilton Grove, London, ON, Canada, N6N 1C9

Joining technique:

Solvent jointed

Manufactured by

IPEX USA LLC, P.O. Box 240696-0696, Charlotte NC 28224

DNV local office: Montreal

Responsibility

The Holder of Certificate takes the responsibility that both design and production are in compliance with Rules, Standards and Regulations listed on page 1 of this Certificate.

Application/Limitation

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

The approval covers application such as non-essential and essential systems, hot and cold water systems chilled and brine water systems, cooling systems (air condition), black and grey water systems, watertreatment fresh and waste water, osmosis systems and evaporation, fresh water bunker lines, etc.

Maximum service pressure as given in above table. Service temperature range 0°C to 60°C.

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

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



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Type Approval documentation

1. Application for Type Approval of 2013-01-29.
2. E-mail from DNV Montreal of 2012-03-07 including IPEX Technical Manual for Vinyl Process Piping Systems and product information.
3. E-mail from DNV Montreal of 2013-04-21 including long term regression curves.
4. Type Approval Assessment Report of 2013-04-03.
5. E-mail from IpeX of 2013-05-07 including test results for Internal Pressure- Short-term and Impact test.
6. Test reports:
 - UL-PT13-025 (VST, water absorption)
 - NSF-J00123111 (external pressure)
 - NSF-J00123112 (external pressure)
 - NSF-J00123113 (external pressure)
 - NSF-J00123127 (external load)

Tests carried out

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

Marking of product

The product is to be marked with the *manufacturer's name: IPEX USA LLC, place of production, material/type designation, nominal pressure, dimensions and production date.*

Certificate Retention/Renewal Survey

The scope of the Retention/Renewal Survey 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.

Survey to be performed after two (2) years (Certificate Retention Survey) and at renewal after four (4) years (Certificate Renewal Survey).

The main elements of the survey are:

- 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 Type Approval Certificate.

END OF CERTIFICATE