

**MARINE DIVISION**

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**Certificate number:** 19741/A1 BV

**File number:** ACM 135/2656/01

**Product code:** 2080H

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**Ipex Inc.**  
Verdun QC - CANADA

*for the type of product*

### THERMOPLASTIC MATERIAL PIPES AND FITTINGS

PVC Schedule 80 Pressure Pipe and Fittings, CPVC Schedule 80 Pressure Pipe and Fittings

**Regulations and standards:**

- BUREAU VERITAS Rules for the Classification of Steel Ships
- BUREAU VERITAS Rules for the Classification of Offshore Units
- FTP Code, Resolution MSC.61(67), IMO Resolution A.753(18)

*This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements of the Regulations and standards mentioned above.*

**This certificate is valid until: 11 Jun 2013**

At Neuilly, on: 23 Feb 2009

**For BUREAU VERITAS,**  
*By order of the Secretary*

Approval office

Local office: BV PORT EVERGLADES  
CENTRE

Surveyor: F. Rosas

L. COURREGELONGUE



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

## **THE SCHEDULE OF APPROVAL**

### **1. PRODUCT DESCRIPTION**

PVC Schedule 80 Pressure Pipe and Fittings, CPVC Schedule 80 Pressure Pipe and Fittings

#### 1.1 Technical specification

Pressure Pipe and Fittings	PVC Schedule 80	CPVC Schedule 80
Nominal size (mm / inch)	12 to 600 / 1/2 to 24	12 to 400 / 1/2 to 16
Max. Working Pressure @ 23°C (kPa) / 73°F (psi)	5860 to 1470 / 850 to 210	5860 to 1540 / 850 to 220
Maximum working temperature (°C / °F)	60 / 140	90 / 194

- Pressure / Temperature parameters to be in accordance with the manufacturer's recommendations
- Jointing methods: solvent cement, threading, flanging, roll or cut- grooved (PVC only)
- Fittings: equal coupling, elbows, tees, reducers, threaded fittings

#### 1.2 Minimum wall thickness (mm)

- According to the manufacturer's technical specification.

#### 1.3 Raw material specification

- Xirtec 140 PVC Sch 80
- Corzan CPVC Sch 80

### **2. DOCUMENTS AND DRAWINGS**

- Manufacturer's technical specification: IPEX Vinyl Process Piping Systems Vol. 1, 4th Edition
- Dimensional specification sheets PVC-13.0.2; PVC80-0.3; PVC80-0.4 and PVC80-0.4B
- Dimensional specification sheets CPVC-1.0.2; CPVC-0.3; CPVC-0.4 and CPVC-0.4B
- Production Data sheet for Corzan® 3118 Gray 245 (CPVC 24448 pipe compound) of April 8, 2008
- Installation guide

### **3. TEST REPORTS**

3.1 Tests carried out: short-term test, impact resistance test, hydro-pressure test, bonding qualification test, flame spread characteristics according to IMO Resolution A.653(16), smoke generation and toxicity test of Corzan 3118 Sch 80 CPVC.

3.2 Test reports N° 01.12703.01.334a, N° 01.12703.01.334b, N° 01.12703.01.334c, N° 01.12703.01.334d and N° 01.12703.01.334e dated 10/10/2007, issued by SwRI (Southwest Research Institute), San Antonio, Texas, USA.

3.3 Report of inspection N° 1150BVN07 dated 07/09/2007 issued by the Society

### **4. APPLICATION / LIMITATION**

4.1 Pipes and fittings are approved for use in locations where no flame spread characteristics are required (acceptable for Noveon grade 3120 Sch 80 CPVC) and for non-essential applications where no fire endurance characteristics are required according to Pt C, Ch 1, App 3 [2.3.1] of Bureau Veritas Rules or appendix 4 of IMO Resolution A.753 (18) when the abbreviations "O or NA" are specified. For inst. domestic water system (cold sea and fresh water), chilled and potable water systems, sanitary systems, heating systems and non-essential systems. Further these products are not to be installed in hazardous areas.

4.2 Detailed drawings of piping system for each application on board ships are to be submitted for review of compliance with the Bureau Veritas Rules and the applicable regulations.

4.3 The pipes and fittings assembly is to be carried out in accordance with the manufacturer's instructions and the person performing these tasks is to be qualified to the satisfaction of the Society Surveyor.

4.4 Behaviour in case of fire (smoke generation and toxicity) is to be deemed satisfactory by the flag authorities of the vessel on board which the piping system is fitted.

### **5. PRODUCTION SURVEY REQUIREMENTS**

5.1 The products are to be manufactured, examined and tested by the manufacturer in accordance with the approved type described in this certificate and Bureau Veritas Rules and Regulations stated on the front page of this certificate.

5.2 Production sites are to be recognized by Bureau Veritas as per NR 320 for HBV products. To this end, the manufacturer has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 The manufacturer has declared to Bureau Veritas that the products detailed in this certificate are manufactured at the following production site: IPEX Inc. in Pineville, NC, 28134, USA.

5.4 Each pipe and fitting is to be tested by the manufacturer at a hydrostatic pressure not less than 1.5 times the nominal pressure.

5.5 Bureau Veritas certificate is not required for the product to be fitted on board units to be classed with Bureau Veritas.

## **6. MARKING OF PRODUCT**

Pipes and fittings are to be at least permanently marked with:

- Manufacturer's name or logo
- Product description
- Size
- Pressure rating
- Design standard
- Raw material

## **7. OTHERS**

7.1 This approval is given on the understanding that the manufacturer will accept full responsibility for informing shipbuilders or their sub-contractors of the proper methods of fitting and general maintenance of the product and of the conditions of this approval.

7.2 This certificate supersedes the Type Approval Certificate N° 19741/A0 BV issued on 11/06/2008 by the Society.

**\*\*\* END OF CERTIFICATE \*\*\***