



Marine & Offshore

Certificate number: 03263/F0 BV

File number: ACM 145/1811/01

Product code: 2080H

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

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

RANDEX S.A.S.

Voiron - FRANCE

for the type of product

THERMOPLASTIC MATERIAL PIPES AND FITTINGS

Thermoplastic Valves

Requirements:

- Bureau Veritas Rules for the Classification of Steel Ships

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 01 Jul 2024

For Bureau Veritas Marine & Offshore,

At BV LYON, on 01 Jul 2019,

Florian Aulen



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 Marine & Offshore. 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 & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore 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.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Thermoplastic Valves

1.1 Design

Ball valves	Type double union manual and actuated / Type compact
Check valves	Type double union / Type compact
Accessories	Through-hull type

1.2 Technical characteristics

Design	Type	Size (mm)	Body material	Connection ends
Double union, 2 ways	453	DN 15 to DN 80	PPG, PPH, PVDF	BSP female threaded, solvent/socket welding
Double union, 2 ways	443	DN 15 to DN 80	PPG, PPH, PVDF	BSP male threaded, electro-fusion, butt welding
Double union, 3 ways	459	DN 15 to DN 50	PPG	BSP female threaded, solvent/socket welding
Double union, 3 ways	449	DN 15 to DN 50	PPG	BSP male threaded, socket welding
Compact, 2 ways	478	DN 15 to DN 50	PPG	BSP female threaded
Compact, 2 angle ways	475	DN 15 to DN 50	PPG	BSP female threaded
Compact, 3 ways	476	DN 15 to DN 50	PPG	BSP female threaded
Double union	153	DN 15 to DN 80	PPG, PPH, PVDF	Adaptor
Double union	143	DN 15 to DN 80	PPG, PPH, PVDF	Adaptor
Double union	133	DN 15 to DN 80	PPG, PVDF	Flanged
Compact	178	DN 15 to DN 50	PPG	BSP female threaded
Through-hull	7225	DN 15 to DN 80	PPG	BSP male threaded
Compact, 2 ways	478	DN 40	PPG	RX10.402 1"1/2 x 2" BSP threaded
Compact, 2 angle ways	475	DN 50	PPG	RX09.010 2" BSP threaded
Compact, 2 angle ways	475	DN 50	PPG	RX04.010 2" BSP threaded and smooth socket
Compact, 2 angle ways	RX17	DN 50	PPG	RX17.001 BSP female threaded
Compact, 2 angle ways	RX17	DN 50	PPG	RX17.002 BSP female threaded and corrugated socket
Compact, 2 ways	468	DN 50	PPG	BSP female threaded
1 piece, 2 ways	452	DN 50 to DN 100	PPG	BSP female threaded

1.3 Ratings

Max. working pressure at 20 °C (MPa)	1.6 (< DN 50) 1.0 (> DN 50)
Temperature range (°C)	-10/110 (PPG - Glass reinforced polypropylene) -20/80 (PPH - Homopolymer polypropylene) -30/140 (PVDF - Polyvinylidene fluorid) 0/60 (PVC - Polyvinyl chloride) -30/60 (PEHD - High density polyethylene)

1.4 Material specification

Valve body	PPG, PPH, PVDF
Ball, NR valve	PPG, PPH, PVDF
Nuts, adaptors	PPG, PPH, PVDF, PVC, PEHD
Sockets	PPG
Ball seats	PTFE
Sealing	EPDM, FKM

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

- Technical Data Sheets as provided on 24/05/2017
- Raw material data sheet Mod.R013
- Instruction Manuals as provided on 24/05/2017

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

3.1 Tests carried out: visual inspection, hydrostatic pressure test (body and seat), assembly test.

3.2 Test report dated 04/04/2017

3.3 Low flame spread characteristics and fire endurance test have not been carried out.

4. APPLICATION / LIMITATION

4.1 Plastic valves belonging to piping systems are approved for use in locations (open decks, cofferdams, void spaces, pipe tunnels, ducts and further locations where low flame spread characteristics are not required) and for non-essential applications where no fire endurance test is required according to Pt C, Ch 1, App 3 of Bureau Veritas Rules of steel ships & Pt C, Ch 1, Sec 4 [table 7] of Rules for the Classification and the Certification of Yacht. These intended applications may be: drinking water system, domestic water system (hot/cold, sea and fresh water), chilled and potable water systems, sanitary system, heating system, compressed air (low pressure) and non-essential systems.

4.2 The use as shell valves is subject to a special consideration of the Society depending on type of units where the valves are fitted. According to Pt C, Ch 1, Sec 4 [5.4] of Rules for the Classification and the Certification of Yacht, the use as yacht shell valve is acceptable, provided the yacht is not subject to an international or national regulation requiring valves made of metallic material.

4.3 The through-hull fittings 7225 may be used as through hull fitting on board yachts. Their use is not acceptable as bulkhead fittings which are required to be watertight or fire resistant. The integrity of watertight bulkheads and fire division is not to be impaired.

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

4.5 The approval does not include any operating gear for remote control of the valves.

4.6 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 supplied by **RANDEX S.A.S.** in compliance with the type described in this certificate.

5.2 This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 **RANDEX S.A.S.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 Work's certificate is required for materials of valve housing.

5.5 Valve housing is to be hydraulically pressure tested to 1.5 times the design pressure.

For information, **RANDEX S.A.S.** has declared to Bureau Veritas the following production site:

RANDEX S.A.S.: 15, route des bois, 38500 - Voiron (France)

6. MARKING OF PRODUCT

Each valve is to be permanently marked with:

- Manufacturer's name or logo
- Product description
- Pressure rating
- Design standard
- Material

7. OTHERS

It is **RANDEX S.A.S.**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

This certificate supersedes the Type Approval Certificate N° 03263/E1 BV issued by the Society.

*** END OF CERTIFICATE ***