



Marine & Offshore

Certificate number: 02845/J0 BV

File number: ACM 198/1601/001

Product code: 0012H

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

ITW Performance Polymers

Montgomeryville - UNITED STATES OF AMERICA

for the type of product

POURABLE COMPOUNDS FOR ENGINE CHOCKING

CHOCKFAST ORANGE PR 610 TCF

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: 06 Apr 2023

For Bureau Veritas Marine & Offshore,

At BV PORT EVERGLADES CENTRE, on 06 Apr 2018,

Flavio Rosas



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:

CHOCKFAST ORANGE PR 610 TCF

intended for chocking of engines, reduction gears, stern tube and strut bearings, deck appliances, ...

Trade name	Resin name	Pour/ Made	Resin formula	Hardener - name	Pour/ Made	Hardener formula
CHOKFAST ORANGE PR 610 TCF	CHOCKFAST ORANGE	Made	P1010R	PR 610 TCF CHOCKFAST ORANGE	Pour	n/a

2. DOCUMENTS AND DRAWINGS:

Chockfast Orange - Technical bulletin 659H - dated 01/2017

3. TEST REPORTS:

Following tests have been carried out:

- BARCOL Hardness,
- Tightness resistance (ASTM D 63868),
- Compression resistance (ASTM D 695637),
- Elasticity modulus (ASTM D 695637),
- Shore hardness (ASTM D 1706.61),
- Thermal shock (ASTM D 746.64),
- Fire resistance (Fed-standard 2021).

4. APPLICATION / LIMITATION:

The pressure on the chocks is not to exceed the following values:

- pressure due to motor or reduction gears weight: 20% of the maximum allowable stress.
- maximum total pressure depending on the maximum allowable temperature according to the following table:

Temperature (°C)	Stress (MPa)
90	2.8
80	4.5
70	6.0
60	7.1
50	8.1
40	8.9
30	9.6
20	10.3

Chocking design of engines and / or reduction gears shall take into account, if necessary, the mechanical reaction to torque and thrust.

A calculation note under the responsibility of the shipbuilders or their sub-contractors must be submitted for each application.

The calculation notes take into account the following parameters:

- For diesel engines:
 - weight of engine,
 - bolts tightening,
 - value of upsetting moment,
 - loads due to ship motions (rolling, pitching, ramming).
- For reduction gears or thrust bearings:
 - weight of reduction gear or thrust bearing,
 - bolts tightening,
 - values of upsetting and rocking moments,
 - propeller thrust.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The **CHOCKFAST ORANGE PR 610 TCF** are to be supplied by **ITW Performance Polymers** 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.

5.3 - **ITW Performance Polymers** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

ITW Performance Polymers
130 Commerce Drive
Montgomeryville, Pennsylvania 18936
United States of America

ITW Performance Polymers
Shannon Industrial Estate
Shannon Free Airport
County Clare
Ireland

ITW Polymers & Fluids Pty. Ltd.
Hassall Street Wetherill Park,
NSW 2164
Australia

ITW Performance Polymers (Wujiang) Co., Ltd.
N° 4680, Pang Jin Road, Wujiang Economic Development Zone
Wujiang, Jiangsu, P.R.C. 215200 - CHINA

5.4 - The working up of this product is to be carried out under supervision of the Manufacturer or a qualified Agent.

6. MARKING OF PRODUCT:

The product containers are to be at least labelled with:

- Manufacturer identification
- Product identification
- Date of manufacture and expiration date
- Storage conditions
- Serial number.

7. OTHERS:

7.1 - It is **ITW Performance Polymers'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.

7.2 - This certificate supersedes the Type Approval Certificate N° 02845/I0 BV issued on 26 Mar. 2013 by the Society.

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