

# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. M-11122  
This Certificate consists of 3 pages

*This is to certify that the*  
**Pourable Compound for Foundation Chocking**  
*with type designations*  
**Loctite Fixmaster Orange and Green**

*Manufactured by*  
**Henkel Cleveland Manufacturing Facility**  
CLEVELAND, United States

*is found to comply with*  
Det Norske Veritas' Rules for Classification of Ships/High Speed and Light Craft

### *Application*

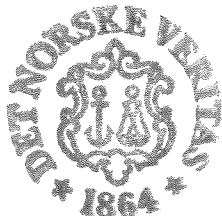
The approval is valid for foundation chocking of diesel engines, reduction gears, thrust bearings, rudder actuators and other auxiliary machinery.

Type	Loctite Fixmaster Orange and Green
Max service temp.:	80 deg. C
Max tot. surf. press	4.5 N/mm <sup>2</sup>
Max press./weight:	0.9 N/mm <sup>2</sup>

*Place and date*  
Høvik, 2009-02-13  
for DET NORSKE VERITAS AS

*E. Alling*

Egil Alling  
Head of Section



*Local Office*  
DNV New York

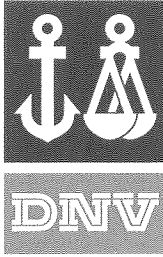
*This Certificate is valid until*  
2011-06-30

*Hans-Kristian Eriksen*

Hans-Kristian Eriksen  
Surveyor

Notice: 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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision 'Det Norske Veritas' shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: M-11122  
File No.: 702.72  
Job id.: 262.1-001429

### Product description

Epoxy based resin.

### Place of production

**Henkel Cleveland Manufacturing Facility, Cleveland, United States**  
**Henkel Loctite (China) Ltd., Yantai, China**  
**Henkel Adhesives Technologies India Pvt, Ltd, Pune, India**

### Application/Limitation

The approval is valid for foundation chocking of diesel engines, reduction gears, thrust bearings, rudder actuators, sterntubes and other auxiliary machinery.

Max. service temp. (deg. C):	90	80	70	60
Max.tot.surf.press.(N/mm2):	2.3	4.5	5.9	7.0
Max. service temp. (deg. C):	50	40	30	20
Max. tot.surf.press.(N/mm2):	8.0	8.7	9.4	10.0

Max. specific load due to weight: 0.9 N/mm2.

The approval is also valid for offshore use with reference to DNV Offshore Service Specification DNV-OSS-101.

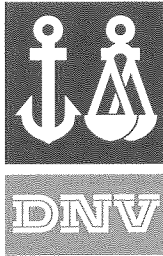
### Type Approval documentation

The approval is based on test reports according to the following standards, received with letter from DNV New York dated 07-02-07 and information given in e-mail from P.Liu, Henkel Technologies, Asia Pacific dated 2007-03-14.

Standards:

ASTM D621, D635, D5379, D3702, D2583-06, D 256-06, D695-02a, STM-700 and STM-767.

Type approval survey carried out at Henkel Loctite (China) Ltd and at Henkel Adhesives Technologies India Pvt, Ltd.



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### **Marking of product**

The product to be marked with manufacturer's name or trademark and type number identification.

### **Certificate retention survey**

For retention of the Type Approval, a DNV surveyor shall perform survey every second year and before expiry date of this certificate to verify that the conditions of the type approval is complied with.

### **Other conditions**

Chocking plan with boltstress-calculation shall be submitted for approval in each particular case.

The tightening –up of engine and reduction gear holding down bolts, controlled at installation, is to be checked after trial trip when cooled down. Information about this is to be given at the delivery of the compound.

The manufacturer's instructions to casting and curing of the compound are to be followed.

After hardening of the chocks and prior to tightening of the holding-down bolts a Barcol hardness test has to be performed with a result of at least 24.

END OF CERTIFICATE