



**JOTUN**

# Jotaguard 600 Series

## Cargo Hold Coatings







# Counting the cost of poor cargo hold maintenance

Strong mechanical force is constantly exposed to cargo hold coatings, especially for the tank top and shedder plate positions. Together with cargo settlement during ship movement and sailing, impact, scraping and gouging are unavoidably the major physical damages which cargo hold coatings must be able to handle.

The common dry cargoes, like coal or ore, almost always contain some impurities and moisture, and are likely to form a chemically corrosive environment. Corrosion due to lack of maintenance will put the structural integrity in danger.

International regulations have been introduced to improve ship design and inspections with a particular focus on corrosion, and on routine in-port inspections.

## **The effect on vessel service life**

Rectifying damage and corrosion resulting from poor choice of cargo hold coating can have a major and lasting effect on vessel earnings and vessel lifetime.

## **The effect on earnings**

A good cargo hold coating must be robust in order to ensure continuing profitability.

Choice of a specialised coating system and its planned maintenance schedule will minimize costly downtime and help maintain the profitability of the vessel.



*Gouging*

## **The effects of legislation**

Good pre-treatment and application of a specialised coating system will ensure the vessel meets the standards now demanded by Classification Societies and other authorities.



*Typical damage*



*Corrosion*



# Jotaguard 600 series

## Providing the solutions

Jotaguard 600 series products are designed and developed to cope with the very tough exposure in cargo holds. As functional coatings, the fast hardness development and mechanical strength, together with corrosion and chemical resistance are very important for property protection.

## Cargo transportation

The major bulk carriers can generally be categorised into Handy, Handymax, Supramax, Panamax and Capesize. Depending on vessel size and type, they are more likely to be dedicated to certain types of transportation pattern.

Spot trading	<ul style="list-style-type: none"> <li>Serve a large number of geographically dispersed global trades</li> <li>Commonly traded cargoes: Grain, sulphur, bauxite/iron ore, coal/coke, bulk minerals</li> </ul>	<ul style="list-style-type: none"> <li>Certificate</li> <li>Chemical resistance</li> <li>Mechanical strength</li> <li>Smooth surface assists cleaning between shifts</li> </ul>
Specialised	<ul style="list-style-type: none"> <li>Serve deepwater terminals</li> <li>Major cargo type: iron ore and coal</li> </ul>	<ul style="list-style-type: none"> <li>Mechanical strength</li> <li>Corrosion protection</li> </ul>



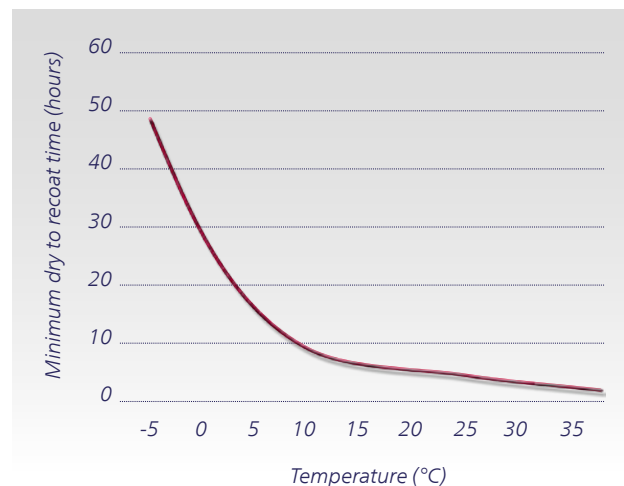
## Product range

Proven in exhaustive testing and on-vessel application Jotaguard 600 series products meet all the needs of cargo hold protection.

## Application benefits – excellent applicability and productivity

- Fast drying at all temperatures, ideal for tight coating schedules

Jotaguard 600 series products have fast drying speeds at all temperatures and especially unrivalled drying speeds at lower temperatures, shortening downtime when it values.



- Same product for all seasons  
Can be used under different climatic conditions and temperatures from -5°C up to 40°C. No winter-grade or cold climate version is necessary.
- Available in two contrasting colours  
Enabling easy inspection.

## Cargo Hold Pathfinder

Jotun's sophisticated Cargo Hold Pathfinder programme is designed to provide a valuable contribution toward achieving recommended coating systems that meet the challenges of specific operational needs.





1 x 125  $\mu\text{m}$  Jotaguard 690 Grey



# Jotaguard 690 / Jotaguard 690 S

## Ultimate durability

Jotaguard 690 and Jotaguard 690 S are designed to provide the ultimate cargo hold protection. Supreme mechanical strength enables them to withstand abrasion, impact and gouging resulting from the toughest operating environments. Together with excellent corrosion resistance, they provide long-lasting service and reduce the maintenance needed during operation.

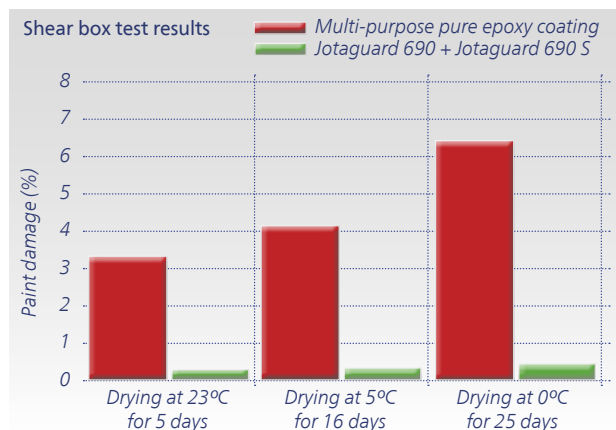
Jotaguard 690 is a two-pack, high solids polyamine cured pure epoxy based primer coating with excellent mechanical properties.

Jotaguard 690 S is recommended for use as a finish coat to maximise abrasion and scratch resistance.

### Paint damage

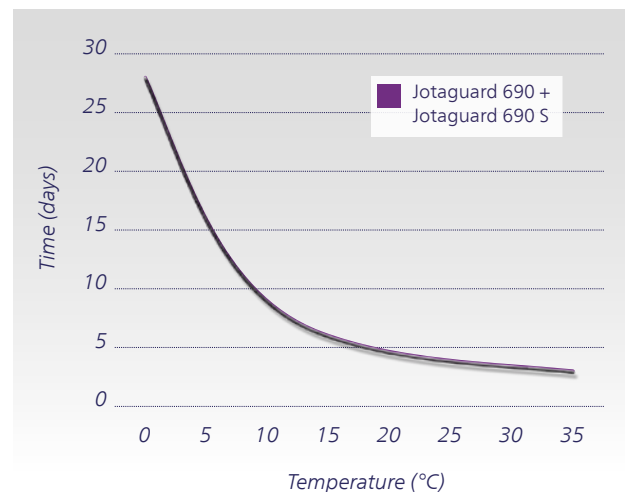
The system:

1 x 125 µm Jotaguard 690 + 1 x 125 µm Jotaguard 690 S outperforms multi-purpose abrasion resistant pure epoxy coatings in all drying conditions, showing high curing speeds and excellent abrasion resistance.



### In-service benefits

- Extended service life: Reduced cost and downtime associated with maintenance
  - Superb mechanical strength, impact and abrasion resistance
  - Long lasting corrosion resistance
- Short time to load first hard/aggressive cargoes
  - Fast hardness development at all temperatures
  - Increased productivity



- FDA compliant, certified for carriage of grain
- Can be used on surfaces prepared to Sa2 (ISO – 8501)
- Hard, smooth surface assists cleaning between cargo shifts
- High build, high volume solids
- VOC compliant

Dry film thickness µm (min/max)	100–250, typical: 125			
Solids (volume%)	75 ± 2			
Colours	Grey, Red			
Mixing ratio	3 parts comp. A (base) 1 part comp. B (curing agent)			
Pot life (23°C)	1 hour			
Touch dry	-5°C	10°C	23°C	40°C
	20 h	5 h	2.5 h	1 h
Dry to recoat minimum	48 h	10 h	5 h	2 h







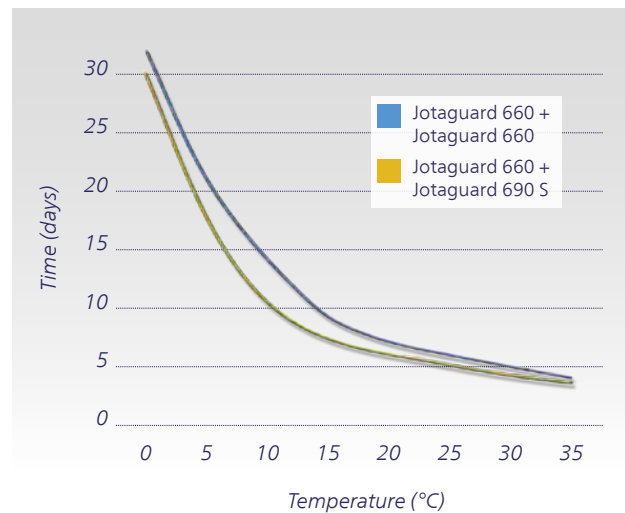
# Jotaguard 660

## Exceptional robustness

Jotaguard 660 is a high performance pure epoxy coating providing very good protection to cargo holds against mechanical damage and corrosive environments.

### In-service benefits

- Very good abrasion and corrosion resistance
  - Protects against angular, hard cargoes
  - Very good corrosion resistance
- Short time to load first hard/aggressive cargo
- Save on surface treatment costs:
  - Can be applied to
    - Surface prepared to Sa2 (ISO-8501)
    - Surface prepared down to St2 (ISO-8501)
    - UHPWJ surface to WA2 FR(M)/(NACE No.5/SSPC-SP 12)
- FDA compliant, certified for carriage of grain
- Hard, smooth surface assists cleaning between cargo shifts
- High build, high volume solids
- VOC compliant



Dry film thickness µm (min/max)	100–250, typical: 125			
Solids (volume%)	72 ± 2			
Colours	Grey, Red			
Mixing ratio	3 parts comp. A (base) 1 part comp. B (curing agent)			
Pot life (23°C)	1 hour			
Touch dry	-5°C	10°C	23°C	40°C
	22 h	5 h	2.5 h	1 h
Drying times	-5°C	10°C	23°C	40°C
	Dry to recoat, minimum			
	48 h	10 h	5 h	2 h





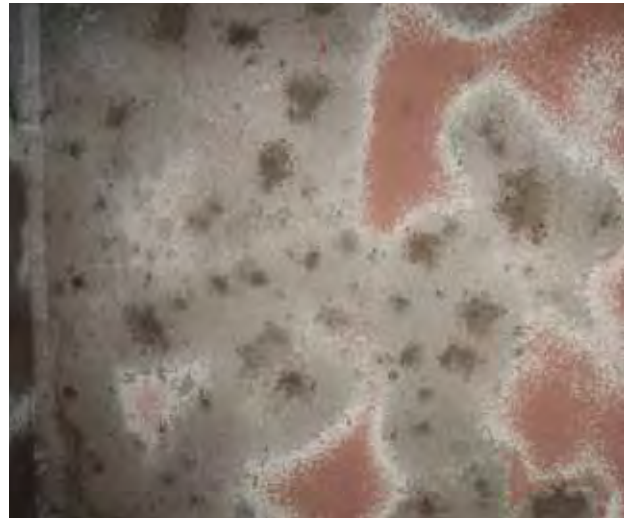
# Jotaguard 630

## Effective protection

Jotaguard 630 is an epoxy based cargo hold coating with tolerance to typical maintenance surfaces.

### In-service benefits

- Low surface treatment requirement, saving on preparation
  - Surface prepared to Sa2 (ISO-8501)
  - Surface prepared down to St2 (ISO-8501)
  - UHPWJ to WA2 FR(M)/(NACE No.5/SSPC-SP 12)
  - Sweep blasting surface
- Good re-coatability and compatibility
- Certified for carriage of grain
- Hard, smooth surface assists cleaning between cargo shifts
- VOC compliant



Dry film thickness $\mu\text{m}$ (min/max)	100–200, typical: 125			
Solids (volume%)	71 $\pm$ 2			
Colours	Grey, Red			
Mixing ratio	4 parts comp. A (base) 1 part comp. B (curing agent)			
Pot life (23°C)	1 hour			
Touch dry	-5°C	10°C	23°C	40°C
	20 h	4 h	2 h	1
Drying times	-5°C	10°C	23°C	40°C
Dry to recoat, minimum	48 h	10 h	4 h	2 h

# Jotun worldwide

Jotun Coatings and Jotun Paints  
Division of Jotun A/S  
Legal Jotun entities world wide are  
listed. For details of Branch offices and  
Jotun representation in countries not  
listed, please visit [jotun.com](http://jotun.com)

## AUSTRALIA

Jotun Australia Pty. Ltd.,  
P.O. Box 105, Altona North,  
9 Cawley Road,  
BROOKLYN, VIC 3025  
Tel: +61 3 9314 0722  
Fax: +61 3 9314 0423

## BRAZIL

Jotun Brasil Ltda.  
Av Santa Luzia, 2084 - Santa Luzia  
24.722-315 São Gonçalo  
RIO DE JANEIRO  
Tel: +55 21 2776 1313  
Fax: +55 21 2776 2263

## P.R. of CHINA

Jotun Coatings (Zhangjiagang) Co. Ltd.  
Jotun COSCO Marine Coatings  
(Qingdao) Co. Ltd.  
Floor 20, Jiu Shi Mansions,  
No. 28 Zhong Shan Road (South)  
SHANGHAI 200010  
Tel: +86 21 6333 080 0  
Fax: +86 21 6326 968 6

Jotun Coatings (Zhangjiagang) Co. Ltd.  
Jotun COSCO Marine Coatings  
(Qingdao) Co. Ltd.  
Room 709-12, Goldlion Digital Network  
Centre, 138 Tiyu Road East,  
GUANGZHOU, 510620  
Tel: +86 20 38 78 07 49  
Fax: +86 20 38 78 19 66

## HONG KONG

Jotun COSCO Marine Coatings (H.K.) Ltd  
Room 1208, 12/F, Stanhope House  
734 King's Road, Quarry Bay  
HONG KONG  
Tel: +852 2527 6466  
Fax: +852 2861 1307

## DENMARK

Jotun Danmark A/S Jotun Coatings  
Columbusvej 5, 2860 Søborg,  
COPENHAGEN  
Tel: +45 4492 9400  
Fax: +45 4492 9401

## EGYPT

El Mohandes Jotun S.A.E.  
El Sheikh Aly Gad El Haq Street  
Florida Mall,  
Masaken Sheraton – 4th Floor  
CAIRO  
Tel: +20 2265 1800  
Fax: +20 2265 1801

## FINLAND

Nor-Maali OY  
Vanhatie 20, 15240 LAHTI  
Tel: +358 3 874 650  
Fax: +358 3 874 6550

## FRANCE

Jotun France S.A.  
22/24 Rue du President Wilson, Bat.A  
92300 LEVALLOIS PERRET  
Tel: +33 1 4519 3882  
Fax: +33 1 4519 3894

## GERMANY

Jotun (Deutschland) GmbH  
Haferweg 38  
22769 HAMBURG  
Tel: +49 40 851 960  
Fax: +49 40 856 234

## GREAT BRITAIN

Jotun Paints (Europe) Ltd.  
Stather Road, Flixborough,  
SCUNTHORPE DN15 8RR  
Tel: +44 1724 400 000  
Fax: +44 1724 400 100

## GREECE

Jotun Hellas Ltd.  
18, Vouliagmenis Avenue,  
Glyfada  
ATHENS 16675  
Tel: +30 210 42 85 980-82  
+30 210 42 86 035-37  
Fax: +30 210 42 85 983/  
+30 210 42 87 237

## INDIA

Jotun India Pvt Ltd.  
204 & 205 Ascot Centre,  
Sahar Road, Andheri (East)  
MUMBAI 400 099  
Tel: +91 22 2822 4600  
+91 22 2820 5900 (+fax)  
Fax: +91 22 2820 5900

## INDONESIA

P.T. Jotun Indonesia Paints and Chemicals  
Kawasan Industri MM2100  
Blok KK-1, Cikarang Barat  
Bekasi 17520  
Tel: +62 21 8998 2657  
Fax: +62 21 8998 2658

## IRELAND

Jotun (Ireland) Ltd.,  
Unit K7, Marina Commercial Park,  
Centre Park Road, CORK  
Tel: +353 214 965955  
Fax: +353 214 965992

## ITALY

Jotun Italia S.P.A.  
Via Petronio, 8, Zona Ind. Noghera  
34147 - MUGGIA (TRIESTE)  
Tel: +39 040 23 98204  
Fax: +39 040 23 98222

## KOREA (SOUTH)

Chokwang-Jotun Ltd.  
30th Block Jisa Science Park,  
1205 Jisa-dong, Gangseo-gu,  
BUSAN 618-230  
Tel: +82 517 976 000  
Fax: +82 517 117 735

## LIBYA

Jotun Libya J.S.Co  
Al Mumtaz Imp. of Paints and Equipm. Co.  
P.O. Box 6850  
Hail Al Andalous district  
TRIPOLI  
Tel: +218 214777811  
Fax: +218 214780718

## MALAYSIA

Jotun (Malaysia) Sdn. Bhd.  
Lot 7 Persiaran Perusahaan,  
Section 23, P.O. Box 7050  
40700 SHAH ALAM  
Tel: +60 351 235 500  
Fax: +60 351 235 632

## THE NETHERLANDS

Jotun B.V.  
Postbus 208  
3200 AE SPIJKENISSE  
Visiting address:  
Curieweg 11b, 3208 KJ Spijkenisse  
ROTTERDAM  
Tel: +31 181 678 300  
Fax: +31 181 617 899

## NORWAY

Jotun A/S  
P.O. Box 2021,  
3202 SANDEFJORD  
Visiting address:  
Hystadveien 167, 3209 Sandefjord  
Tel: +47 33 45 70 00  
Fax: +47 33 45 79 00

## OMAN

Jotun Paints Co. LLC  
Rusayl Ind. Estate, Road No.10  
P.O. Box 672 Code 111, MUSCAT  
Tel: +968 2444 6100  
Fax: +968 2444 6105

## PAKISTAN

Jotun Pakistan (Pvt.) Limited  
Plot no. 2-H, Sector 5  
Korangi Industrial Area, KARACHI  
Tel: +92 213 5121 491-2  
Fax: +92 213 5121 493

## PHILIPPINES

Jotun (Philippines) Inc.  
846 West Service Road, Km.18  
South Super Highway  
Paranaque City,  
METRO MANILA 1714  
Tel: +63 2239 1032-34  
Fax: +63 2822 0760

## POLAND

Jotun Polska Sp.zo.o.  
Ul. 10 Lutego 16, 81-364 GDYNIA  
Tel: +48 58 555 1515  
Fax: +48 58 781 9692

## RUSSIA

Jotun Paints O.O.O.  
Varshavskaya Str., 23/2, Office 53  
196128 ST. PETERSBURG  
Tel: +7 81 2332 0080 / 2785 0034  
Fax: +7 81 2783 0525

## SAUDI ARABIA

Jotun Saudia Co. Ltd.  
Jeddah Industrial City, Phase 3,  
P.O. Box 34698, JEDDAH 21478  
Tel: +966 2635 0535 / 2636 1271  
Fax: +966 2636 2483

## SINGAPORE

Jotun (Singapore) Pte. Ltd.  
37 Tuas View Crescent  
Singapore 637236  
Tel: +65 650 882 88  
Fax: +65 6265 7484

## SOUTH AFRICA

Jotun Paints South Africa (PTY) Ltd.  
Wimbledon Road, P.O.Box 187  
BLACKHEATH 7581  
Tel: +27 21 905 1070  
Fax: +27 21 905 1652

## SPAIN

Jotun Iberica S.A.  
Poligon Santa Rita,  
Calle Estatica no. 3,  
08755 Castellbisbal,  
BARCELONA  
Tel: +34 937 711 800  
Fax: +34 937 711 801

## SWEDEN

Jotun Sverige AB  
P.O. Box 151, Klangfärgsgatan 13,  
421 22 VÄSTRA FRÖLUNDA  
Tel: +46 3169 6300  
Fax: +46 3169 6397

## THAILAND

Jotun Thailand Ltd  
Amata Nakom Ind. Estate (BIPII)  
700/353 Moo 6 Tumbol  
Donhualoh, Amphur Muang  
CHONBURI 2000  
Tel: +66 38 214 824-6/214 347-51  
Fax: +66 38 214 373/375

## TURKEY

Jotun Boya San. ve Ticaret. A.S.  
Yeni Camlik Caddesi, Ayaz Sok. No. 2/4,  
4. Levent,  
ISTANBUL 34418  
Tel: +90 21 2279 7878  
Fax: +90 21 2279 2549

## U. A. E.

Abu Dhabi  
Jotun Abu Dhabi (LLC)  
P.O. Box 3714, Mussafah  
ABU DHABI  
Tel: +971 2551 0300  
Fax: +971 2551 0232

## Dubai

Jotun U.A.E. Ltd. (LLC)  
P.O. Box 3671,  
Al Quoz Industrial Area  
DUBAI  
Tel: +971 4339 5000  
Fax: +971 4338 0666

## USA

Jotun Paints, Inc.  
9203 Highway 23, P.O. Box 159,  
Belle Chasse, LA 70037  
Tel: +1 800 229 3538 /  
+1 504 394 3538  
Fax: +1 504 394 3726

## VIETNAM

Jotun Paints (Vietnam) Co. Ltd.  
Song Than Industrial. Zone,  
No.1 Street 10,  
Di An District, Binh Duong Province  
Tel: +84 65 074 2206-9  
Fax: +84 65 074 2205

## YEMEN

Jotun Yemen Paints Co. Ltd  
P.O. Box 70183, Al Alam  
ADEN  
Tel: +967 2820 546-9  
Fax: +967 2249 362

## Jotun A/S

P.O. Box 2021,  
N-3202 Sandefjord, Norway  
Tel: +47 33 45 70 00  
[jotun.com](http://jotun.com)



Jotun Protects Property