



LOXEAL®

ENGINEERING ADHESIVES

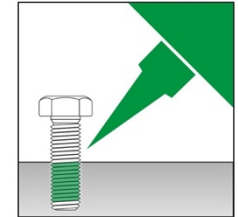
PUT IT ON & GO TO SLEEP



MEDIUM STRENGTH THREADLOCKING ADHESIVE

LOXEAL 55-03

Technical Data Sheet



Overview:

Loxreal® 55-03 Medium Strength Anaerobic Adhesive for thread locking of bolts and nuts of all types requiring to be dismantled. Suitable for use on oily surfaces. High resistant to heat, corrosion, vibrations, water, gases, oils, hydrocarbons and many chemicals. Proven unscrewing resistance at +200°C. It keeps sealing properties unchanged between -55°C to +200°C and up to +250°C for short times.

Approvals:

DVGW and GAZ DE FRANCE approved as a gas -tight sealant for threaded fittings according to European norm EN 751-1.

WRAS approved, it is suitable for use in contact with potable water.

Compliant with UBA (Umweltbundesamt – German Environment Agency).

Physical Properties:

Adhesive Type:	Anaerobic Methacrylate
Colour:	Blue
Fluorescence:	Under Blue Light
Specific Weight (+25°C g/ml):	1.07
Viscosity at +25°C (mPas):	1,700 – 9,000 thixotropic
Friction coefficient μ	~ 0.10
Gap Filling:	M36 / 0.25 mm
Shelf Life:	12 months at 25°C in original unopened packaging

Curing Performance:

Curing rate depends on the assembly clearance, material surfaces and temperature. Functional strength is usually reached in 1 – 3 hours and full curing takes 24 – 36 hours. In case of passive surfaces and / or low temperature, a fast cure can be obtained using Loxreal activator 11, even if its use may reduce the final strength.

Curing Properties:

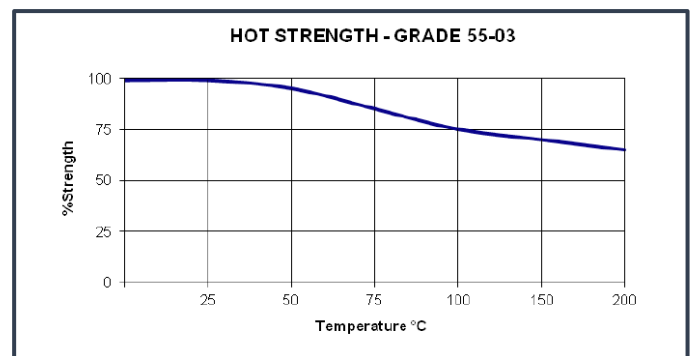
Bolt M10 x 20 ZN – quality 8.8 – nut h = 0.8 d at +25°C	
Handling cure time:	10 – 20 minute
Functional cure time:	1 – 3 hours
Full cure time:	3 – 6 hours
Locking torque (ISO 10964):	
- Breakaway:	18 – 23 Nm
- Prevailing:	9 – 16 Nm
Shear Strength (ISO 10123):	9 – 13 N/mm ²
Temperature range:	-55°C to +200°C

Environmental Resistance

Hot strength

The graph below shows the mechanical strength vs. temperature.

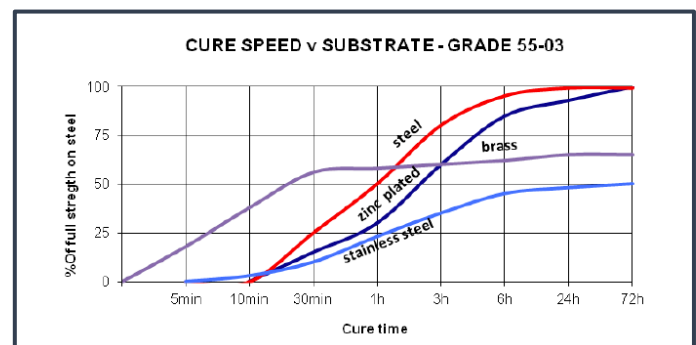
ISO 10964 – Bolt M10 x 20 Zn – quality 8.8 – nut h = 0.8 d at +25°C – pre-torque 5 Nm.



Cure Speed v Substrate

The graph hereunder shows the breakaway strength development of the product (with time) on steel bolts/nuts M10 x 20 in comparison with several substrates.

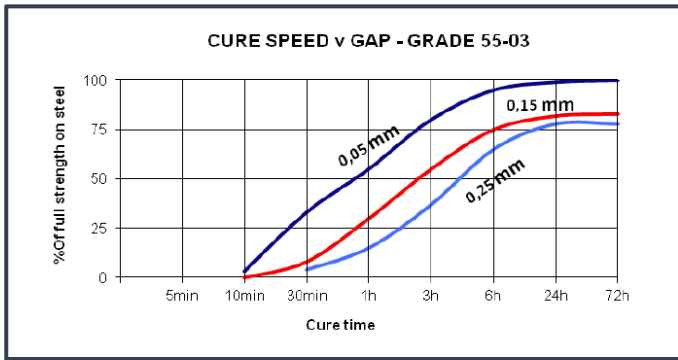
Tested in accordance with ISO 10964 at +25°C



Cure Speed v Gap

The graph below shows the product shear strength (as %) at different increasing controlled gaps.

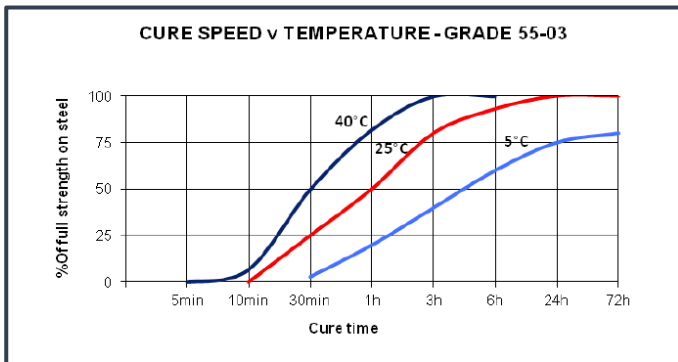
Steel pins/collars, tested in accordance with ISO 10123 at +25°C



Cure Speed v Temperature

The following graph shows the breakaway strength of the product (as %) at different temperatures.

Steel bolts/nuts M10 x 20, tested according to ISO 10964.

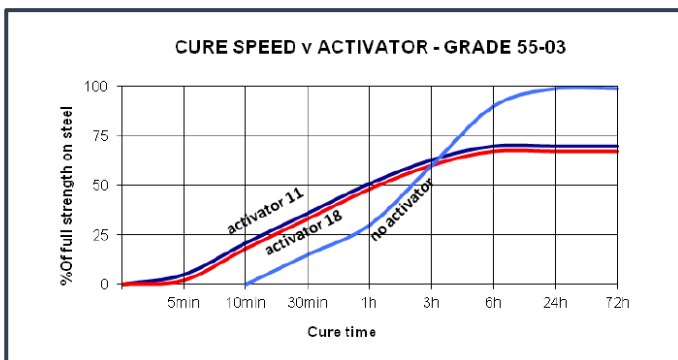


Cure Speed v Activator

Polymerization could be slowed down by substrate nature, large gaps; cure speed can be improved by applying appropriate activator to the substrate(s).

The following graph shows the breakaway strength of the product (as %) and the cure speed developments using our activator 11 and 18 respectively, compared to the one with no activator.

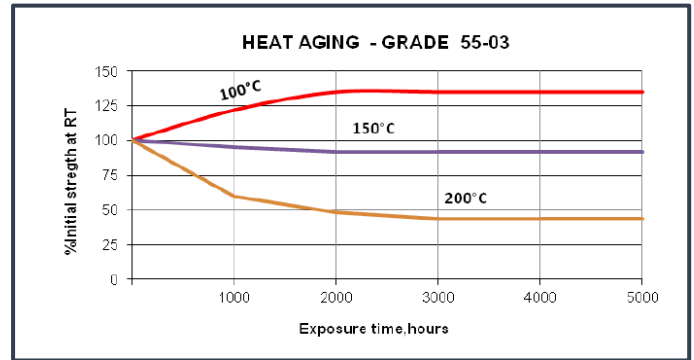
Zn bolts/nuts M10 x 20, tested according to ISO 10964 at a temperature of +25°C.



Heat Aging

The graph below shows the strength resistance behaviour as a function of temperature/time.

Zn bolts/nuts M10 x 20 – (pre-torque of 5 Nm, cured 7 days at +25°C according to ISO 10964



Chemical Resistance:

Aged under conditions below after 24 hours from polymerization at indicated temperature.

Substance	°C	Resistance after 100 h	Resistance after 1,000	Resistance after 5,000 h
Motor oil	125	Excellent	Excellent	Excellent
Gear box oil	125	Excellent	Excellent	Excellent
Gasoline	25	Excellent	Good	Good
Water/glycol 50%	87	Excellent	Good	Good
Brake oil	25	Excellent	Excellent	Excellent
Ethanol	25	Excellent	Excellent	Excellent
Acetone	25	Good	Good	Good
Biodiesel	25	Excellent	Excellent	Excellent

For information on resistance with other chemicals, contact Loxeal Technical Service.

Direction for use:

The product is recommended for use on metal substrates.

Clean and degrease parts with **Loxeal Cleaner 10**.

Apply product to fill the gap completely, assemble parts and hold on for curing time. Liquid product can damage coating, some plastics and elastomers and late stress-cracking events might induced if used with some thermoplastics.

For application on non-metal materials, contact Loxeal Technical service. For disassembly, use normal tools and eventually heat pieces at +150°C to +250°C, remove any residue of the cured product mechanically and clean parts with acetone.

Storage:

We recommend to store this product in a cool and dry place at temperature not exceeding +25°C. To avoid contaminations, do not refill containers with used products. For more information on applications, storage and handling, contact Loxeal Technical Service.

Safety and Handling:

Consult the Safety Data Sheet before use.

Note:

The data contained herein, obtain in Loxeal laboratories, are given for information only; if specifics are required, please contact Loxeal technical department. Loxeal ensures abiding quality of supplied products according to its own specifics. Loxeal cannot assume responsibility for the results obtained by others which methods are not under Loxeal control. It is user's responsibility to determine suitability for user's purpose of any product mentioned herein. Loxeal disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from the sale or use of Loxeal products. Loxeal specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.

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