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Technical Data Sheet

Chester Lock **P80**

Research and Development Department

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PRODUCT DESCRIPTION

ChesterLock P80 pre-applied adhesive is a composition based on an aqueous solution of acrylic compounds containing microcapsules, the contents of which act as an initiator of the curing reaction. The product is applied to the threaded surface and dried. After drying, it forms a dry inactive coating. During assembly (screwing in the screw), the active agent contained in the microcapsules is released, which initiates the curing process.

APPLICATION FIELDS

The product is intended to create sealing and anti-loosening and anti-corrosion coatings on threaded surfaces.

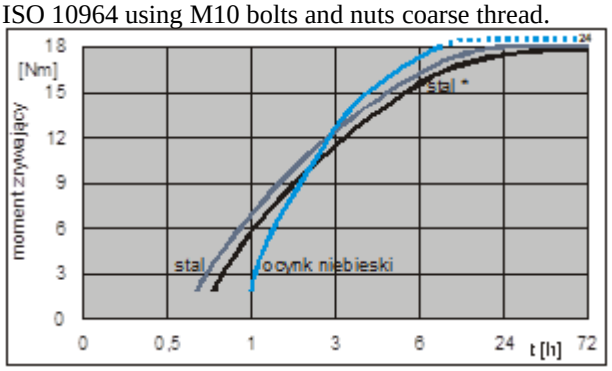
PROPERTIES

Form	dry coating
Colour	red
Flash point [° C]	>100

TYPICAL CURING PERFORMANCE

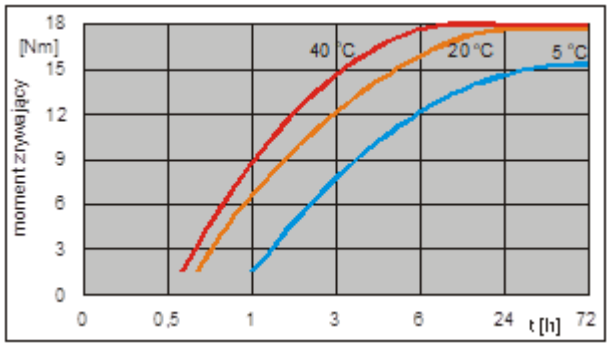
Cure speed vs. substrate

The graphs show the increase in breaking torque screw connection as a function of time for different types of substrate. The tests were performed in accordance with the standard ISO 10964 using M10 bolts and nuts coarse thread.



Cure speed vs. temperature

The graph below shows the relative increase in breakaway torque developed with time at different temperatures. Developed on M10 medium steel bolts and nuts. Tested according to ISO 10964.



PHISICAL PROPERTIES OF CURED MATERIAL

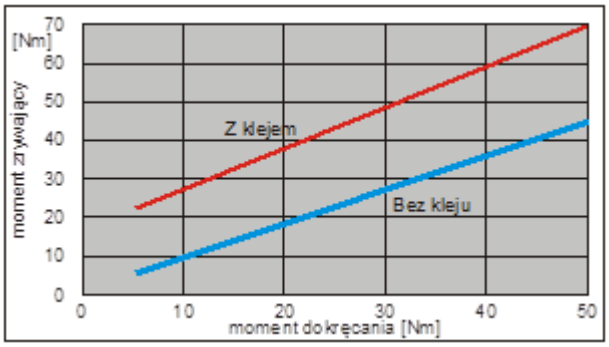
Coefficient of thermal expansion [1/K] ca. **10^{-4}**
Coefficient of thermal conductivity [W/mK] ca. **0,1**
Specific heat [J/kgK] ca. **300**

PERFORMANCE OF CURED MATERIAL

Breakaway torque [Nm] [ISO 10964 (3.3)]
Value: **18**
Range: 11-25
Prevail Torque [Nm] [ISO 10964 (3.5)]
Value: **2**
Range: 1-3
The above-mentioned parameters were determined after 24 h curing at the temperature of 22 ºC using M10 steel coarse thread bolts and nuts and calibrated shaft and hubs pairs

Breakaway torque vs tightening torque

The graph below shows the breakaway torque for different tightening torques.. The tests were carried out on steel coarse thread bolts and nuts after 72h curing at 22°C.

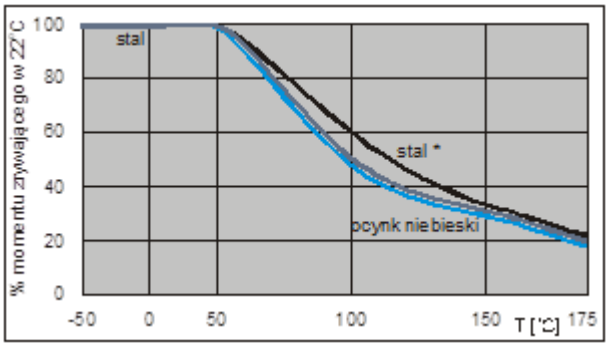


TEMPERATURE RESISTANCE

The tests were carried out after 72h curing at 22°C

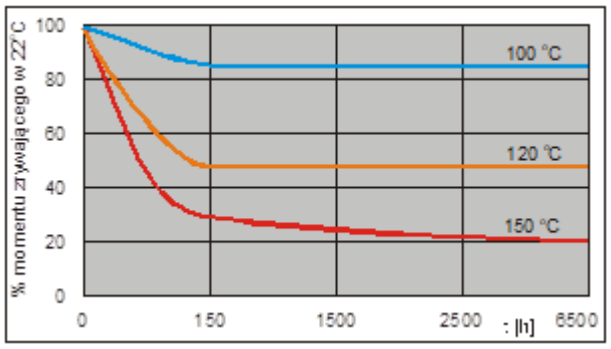
Breakaway torque vs temperature

The graphic presentations show the change of breaking torque of a threaded connection as a function of temperatures for various types of substrate. The tests were carried out on M10 steel coarse thread bolts and nuts. Tested according to ISO 10964 at temperature



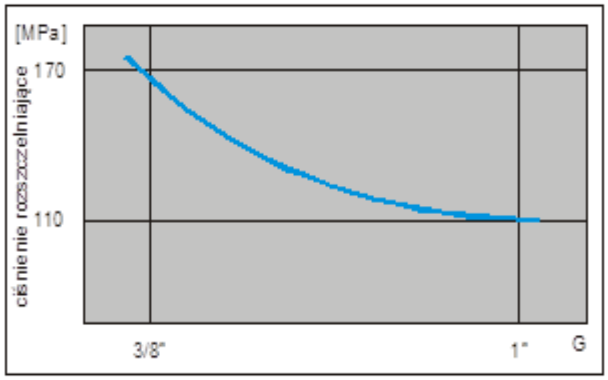
Breakaway torque of a threaded connection as a function of time at elevated temperatures (Heat Aging)

The graphic presentations show the change of breaking torque as a function of time at various temperatures.. The tests were carried out on M10 steel blue zinc plated coarse thread bolts and nuts. Tested according to ISO 10964. Parts are aged at temperature indicated and tested at 22°C



LEAKTIGHTNESS OF THREAD JOINTS

The graph below shows the pressure value unsealing the connection as a function of the thread diameter. The tests were carried out with the use of connectors covered with a yellow chromate layer with threads made in accordance with ISO 228-1. The pressure tests were carried out at the temperature of 20 ° C with the use of water.



CHEMICAL RESISTANCE

Solvent	Chemical resistance
Petrol	+
Diesel	+
Brake fluid	+
Engine oil 130 oC	+
Glycol	+
Kerosine	+
Nitric acid 10%	+
Acetic acid 10%	+
Amines	+
Phenol	+
Lactic acid	+
Sea water	+
Natural gas	+
Ammonia	-
Chlorine	-
Oxygen	-

+ - can be used unreservedly
- - not recommended
Unless otherwise stated, the tests were carried out at 22 ° C.
The tests were carried out after 72 hours of hardening at the temperature of 22 ºC.
The complete Resistance Table for CHESTER anaerobic materials can be find on our website.

GENERAL INFORMATION

Storage

Product should be stored in closed, original containers at a temperature between +5°C to+28°C.
Thread elements with a pre-applied coating can be stored at 20 oC for 3 years

Application method

The elements to be applied should be clean and degreased. Immediately before application, the adhesive base should be mixed with microcapsules and then applied manually (with a brush) or automatically. Coated elements must be dried. The maximum drying temperature should not exceed 60 ºC