

Nedlite

Lightweight fasteners with no safety compromises



One of the greatest challenges to the automotive industry today is reducing CO2 emissions. Using lighter materials - without sacrificing on quality or reliability - is a very important step towards realising this objective. Nedschroef's 'Nedlite' range of aluminium fasteners, which enable the joining of lightweight components, can facilitate this. Aluminium offers new possibilities in the areas of construction and economy.

Lightweight metals have much larger thermal expansion coefficients than steel. This may lead to extensive thermally-induced stresses if a bolted joint with steel screws and magnesium and/or aluminium components is operating at elevated temperatures. However, using aluminium instead of steel screws means there is almost no stress under thermal load, thanks to the similar thermal expansion coefficients. Therefore, the limiting surface pressure of the lightweight components won't be exceeded. As a result, lighter components may be created which are equally durable and reliable as more traditional options.

Field of application

Nedlite fasteners are mainly used in gearbox applications, in the magnesium cylinder head cover or the magnesium gearbox housing to engine. We offer sleeves and washers, nuts and bolts with several types of internal and external drive. Nuts can be applied in a variety of ways, for instance earthing. Nuts are delivered blank and our bolts are usually lubricated with DF905. Alternatively an Oxsilan-Xylan coating can be applied to protect the bolt against intergranular corrosion.

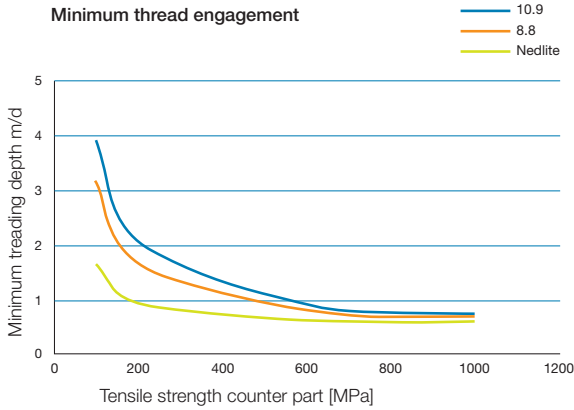
With aluminium fasteners, the threaded hole doesn't need to be as deep as with steel fasteners, saving on drilling and thread cutting time. Counterparts can be made of cost-effective lightweight metals.

Nedschroef offers the integrated production, design and systems engineering capacity required to create bespoke solutions for even the most specific and demanding requirements at an attractive price point. Our engineers are ready to work together with you to create the ideal solution for your own application.

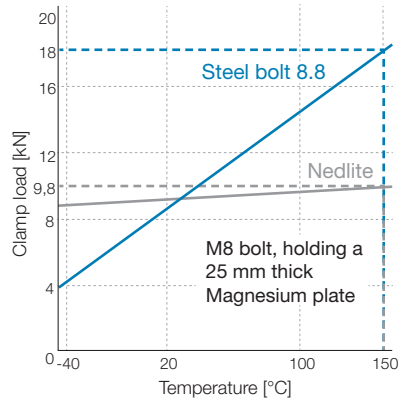
For more information: www.nedschroef.com

 **NEDSCHROEF**

one step ahead...



Counterparts are made of lightweight metals with lower tensile strength, such as aluminium or magnesium. With aluminium fasteners, the threaded hole doesn't need to be as deep as with steel fasteners. This reduces drilling- and thread cutting time. The counterpart can be designed to be lighter, to save on cost and weight.



Advantages

- No contact corrosion if combined with magnesium
- Better corrosion resistance
- Weight reduction
- More design freedom
- Much larger thermal expansion coefficients than steel
- Shorter thread engagement
- High preload forces
- High economic efficiency
- Young's modulus of aluminium is one third of Young's modulus of steel
Weight of aluminium fastener is one third of weight of steel fastener
- Despite lower preload, the Nedlite-bolt has a larger elongation (creep is much lower than with steel bolts)

Bolt properties

- Material EN AW 6056
- Range of diameter: from M6 to M12
- Range of length: ≤ 100 mm
- Tensile strength Rm ≥ 400 N/mm²
- Yield strength Rp0.2 ≥ 350 N/mm²
- Elongation A ≥ 8%
- Tensile strength Rm ≥ 350 N/mm² after 2.000 h at 150°C
- Temperature resistant up to 150°C; temporary up to 180°C
- Thermal expansion of 21 • 10⁻⁶ K⁻¹

Nut properties

- Material: EN AW 5052 AIMg2,5
- Hardness 97 HV5



Steering column
Magnesium gearbox housing
Engine
Magnesium cylinder head cover
Mass connection (Nuts & washers)

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For over a century, Koninklijke Nedschroef Holding B.V. has developed, manufactured and supplied fasteners and special parts for the automotive industry. In addition, we design and produce superior forming machines and tools for the metal forming industry. Nedschroef delivers world-class services and innovative, cost-effective solutions. Our expanding global operations offer everything from product design and development to delivery, installation and service, supported by a vast global partner network. 1,600 people at 24 facilities, including six centres of competence, in 14 countries worldwide are committed to our Full Service Provision concept.