DATASHEET

# EN41 (905M39)

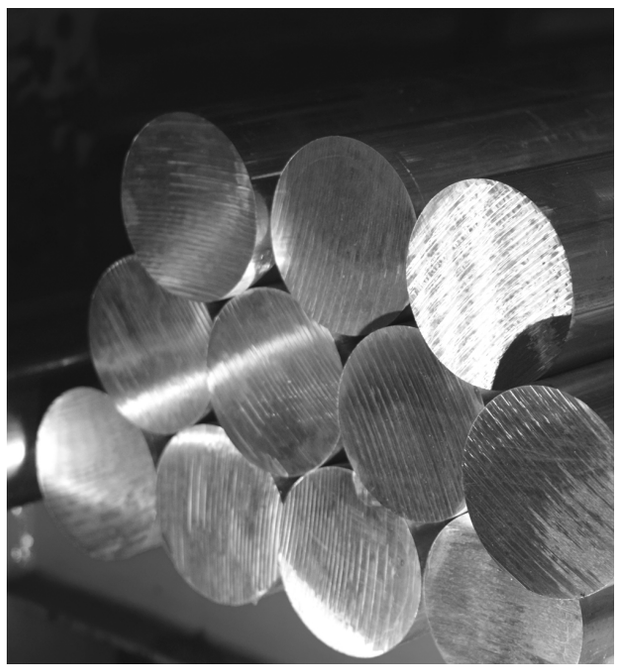
## CHROMIUM MOLYBDENUM NITRIDING STEEL

### PRODUCT OVERVIEW

Supplied in the hardened and tempered 'R' and 'S' condition, EN41 (905M39) is a chromium-aluminium-molybdenum engineering steel which is suitable for nitriding and once nitrided, offers a hard-wearing casing which is superior to EN40B. EN41 offers an excellent overall combination of wear and abrasion resistance.

With high toughness and ductility, EN41 nitriding steel is used in the manufacture of die casting dies, clutch plates and shackle pins.

EN41 (905M39) in the 'R' condition offers a tensile of 700-850 N/mm² whilst EN41 in the 'S' condition offers a tensile of 775-925 N/mm². Wear resistance after nitriding is 68HRc which is higher than EN40B.



### ABOUT NITRIDING

EN41 (905M39) is supplied hardened and tempered in the R or S condition but subsequent nitriding affords numerous benefits. The process imparts a high wearing abrasion resistant surface which results in effective resistance to wearing, scuffing, galling and seizure. An added benefit of nitriding EN41 is that the fatigue resistance of the steel is also significantly increased. Whilst the nitriding process is time consuming, the performance enhancements it affords make EN41 an attractive material for use in a wide variety of commercial applications. Minimal distortion is also a positive result of the nitriding process.

EN41 (905M39) should be considered in applications where an even greater hard-wearing surface is required as once nitrided, it out performs another nitriding steel in our product range, EN40B. The welding of EN41 (905M39) is not recommended but machinability is good. EN41 can also be annealed if required.

### MATERIAL SPECIFICATIONS

| | |
|---|---|
| BRITISH BS 970:1991 | 905M39 |
| BRITISH BS 970:1955 | EN41B |

### WELDABILITY

Not recommended

### PRODUCT AVAILABILITY

We stock EN41 (905M39) in bar form

FOR CHEMICAL AND MECHANICAL PROPERTIES, PLEASE REFER TO THE REVERSE SIDE OF THIS TECHNICAL DATASHEET

# EN41 (905M39) CHROMIUM MOLYBDENUM NITRIDING STEEL

## PRODUCT BENEFITS

- Nitriding steel
- Superior to EN40B once nitrided
- Excellent wear and abrasion resistance
- High toughness and ductility
- For very hard wearing applications
- Good machinability
- Can be annealed if required

## APPLICATIONS

EN41 (905M39) is supplied in the 'R' and 'S' condition. Commercial application examples include:

- Hydraulic cylinders
- Gears & pinions
- Die inserts, piston pins, cams
- Valve and gate parts
- Clutch plates, plates used in brick pressies
- Connecting rods, die casting dies
- Rollers and ball joints

## CHEMICAL COMPOSITION (weight %)

| | C | Si | Cr | Mo | Al | Mn | Ni | P | S |
|---|---|---|---|---|---|---|---|---|---|
| Min | 0.35 | 0.10 | 1.40 | 0.10 | 0.90 | | | | |
| Max | 0.45 | 0.45 | 1.80 | 0.25 | 1.30 | 0.65 | 0.40 | 0.05 | 0.05 |

## MECHANICAL PROPERTIES (subject to ruling section)

| Condition | Tensile N/mm² | Yield N/mm² | Elongation % | Izod KCV J | Hardness Brinell |
|---|---|---|---|---|---|
| R | 700 - 850 | 480 | 16 | 28 | 201 - 255 |
| S | 775 - 925 | 525 | 14 | 16 | 223 - 227 |

## ABOUT THAMES STOCKHOLDERS

Thames Stockholders is one of the UK's leading suppliers of engineering steels. We stock EN41 (905M39) in bar form. We offer our stock products to both domestic and International customers. We can also process your products internally and cut your material to your exact size requirements. With ideal proximity to the UK's main motorway network and ports, our location is ideal for the supply and distribution of high-quality engineering steels.

**To discover more about our products and to receive a competitive quotation, please call Thames Stockholders today to speak to a member of our technical team on +44 (0)20 8805 3282.**


Thames Stockholders
Unit 5W. Woodall Road, Redburn Industrial Estate
Ponders End, Enfield, Middlesex EN3 4LQ

t +44 (0)20 8805 3282
f +44 (0)20 8804 8164
w www.thamesstock.com
e sales@thamesstock.com


AS/EN 9100 SERIES Aviation, Space and Defense

UKAS TESTING 1930