

This page is mainly introduced the A 705 XM-12 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of A 705 XM-12, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Datasheet for Steel Grades Specialsteel A 705 XM-12

A 705 XM-12 Standard Number:

| ITEM | Standard Number | Descriptions |
|------|---------------------|--|
| 1 | A 705/A 705M (2009) | Age-Hardening Stainless Steel Forgings |

A 705 XM-12 Chemical composition (mass fraction) (wt.%)

| Chemical | Min.(%) | Max.(%) |
|----------|---------|---------|
| C | | 0.07 |
| Mn | | 1.00 |
| Si | | 1.00 |
| P | | 0.04 |
| S | | 0.03 |
| Cr | 14.00 | 15.50 |
| Ni | 3.50 | 5.50 |
| Mo | | |
| Cu | 2.50 | 4.50 |
| Nb | 0.15 | 0.45 |

| | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|-------|
| C | Si | Mn | P | S | Cr | Ni | Mo | V | Ta |
| W | N | Cu | Co | Pb | B | Nb | Al | Ti | Other |

Age-Hardening Stainless Steel Forgings

A 705 XM-12 Physical Properties

| | | |
|------------------|---------|-----------------|
| Tensile strength | 115-234 | σ_b /MPa |
|------------------|---------|-----------------|

| | | |
|----------------|---------|----------------------------------|
| Yield Strength | 23 | $\sigma_{0.2} \geq / \text{MPa}$ |
| Elongation | 65 | $\delta 5 \geq (\%)$ |
| ψ | - | $\psi \geq (\%)$ |
| Akv | - | $Akv \geq / \text{J}$ |
| HBS | 123-321 | - |
| HRC | 30 | - |

A 705 XM-12 Mechanical Properties

| | | |
|------------------|---------|----------------------------------|
| Tensile strength | 231-231 | σ_b / MPa |
| Yield Strength | 154 | $\sigma_{0.2} \geq / \text{MPa}$ |
| Elongation | 56 | $\delta 5 \geq (\%)$ |
| ψ | - | $\psi \geq (\%)$ |
| Akv | - | $Akv \geq / \text{J}$ |
| HBS | 235-268 | - |
| HRC | 30 | - |

A 705 XM-12 Heat Treatment Regime

| Annealing | Quenching | Tempering | Normalizing | Q & T |
|-----------|-----------|-----------|-------------|-------|
| √ | √ | √ | √ | √ |

A 705 XM-12 Range of products

| Product type | Products | Dimension | Processes | Deliver Status |
|-----------------|--|----------------------------|---|---|
| Plates / Sheets | Plates / Sheets | 0.08-200mm(T)*W*L | Forging, hot rolling and cold rolling | Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting |
| Steel Bar | Round Bar, Flat Bar, Square Bar | $\Phi 8$ -1200mm*L | Forging, hot rolling and cold rolling, Cast | Black, Rough Turning, Shot Blasting, |
| Coil / Strip | Steel Coil / Steel Strip | 0.03-16.0x1200mm | Cold-Rolled & Hot-Rolled | Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting |
| Pipes / Tubes | Seamless Pipes/Tubes, Welded Pipes/Tubes | OD:6-219mm x WT:0.5-20.0mm | Hot extrusion, Cold Drawn, Welded | Annealed, Solution and Aging, Q+T, ACID-WASHED |

We can produce Specialsteel the specifications follows: