

# Database of Steel and Alloy (Marochnik)

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## Characteristics for grade 11YuA ( 11ЮА ).

|                           |                                      |
|---------------------------|--------------------------------------|
| <b>Grade :</b>            | 11YuA ( 11ЮА )                       |
| <b>Classification :</b>   | High quality structural carbon steel |
| <b>Equivalent grades:</b> | Is absent                            |

## Chemical composition in % for grade 11YuA ( 11ЮА )

| C           | Si       | Mn        | Ni       | S         | P         | Cr       | Al          | Cu      |
|-------------|----------|-----------|----------|-----------|-----------|----------|-------------|---------|
| 0.08 - 0.13 | max 0.13 | 0.3 - 0.5 | max 0.25 | max 0.025 | max 0.025 | max 0.15 | 0.02 - 0.07 | max 0.2 |

## Mechanical properties under T=20°C for grade 11YuA ( 11ЮА )

| Assortment           | Dimension | Direct. | $\sigma_B$ | $\sigma_T$ | $\delta_5$ | $\psi$ | KCU                 | Heat treatment |
|----------------------|-----------|---------|------------|------------|------------|--------|---------------------|----------------|
| -                    | mm        | -       | MPa        | MPa        | %          | %      | kJ / m <sup>2</sup> | -              |
| Band, GOST 8851 - 75 |           |         | 290-410    |            | 28         |        |                     |                |

## Specification :

### Mechanical properties :

- $\sigma_B$  - Tensile strength , [MPa]
- $\sigma_T$  - Yield stress , [MPa]
- $\delta_5$  - Specific elongation at fracture , [ % ]
- $\psi$  - Reduction of area , [ % ]
- KCU** - Impact strength , [ kJ / m<sup>2</sup> ]
- HB** - Brinell hardness , [MPa]

Database of steels and alloys (Marochnik) contains information about chemical composition and properties more then 2500 steels and alloys (stainless steel, alloy steel, carbone steel, structural steel, tool steel, cast iron, aluminum alloy, titanium alloy, copper alloy, nickel alloy, magnesium alloy and others).  
Helpfull for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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