

MATERIAL NUMBER 1.0334 · CLASS 1.0

# FB10

## Material no. 1.0334

also listed as DD 12 G 1

Chemical composition, mechanical and physical property values, and 29 standard designations from 11 regions.

|                                          |                                               |                                      |
|------------------------------------------|-----------------------------------------------|--------------------------------------|
| DENSITY<br><b>7.85</b> g/cm <sup>3</sup> | OTHER DESIGNATIONS<br><b>29</b> in 11 regions | PROPERTY VALUES<br><b>14</b> on file |
|------------------------------------------|-----------------------------------------------|--------------------------------------|

### Chemical composition

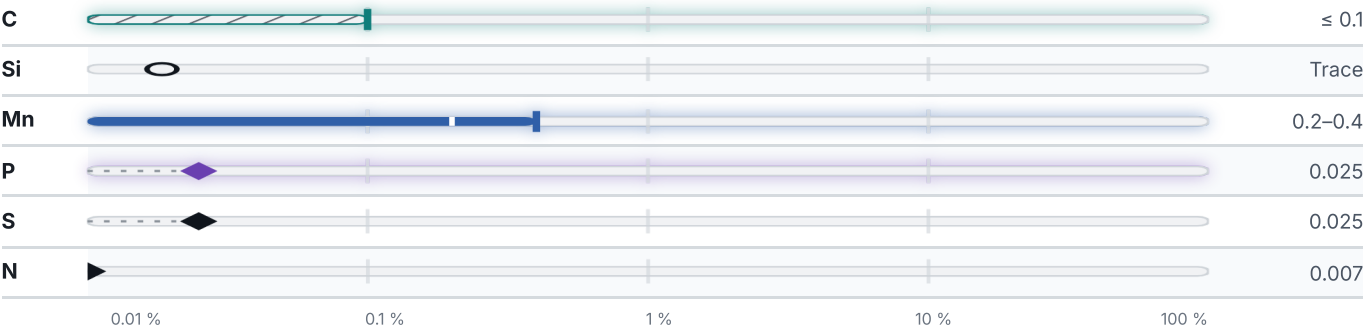
Mass fraction in %

What this alloy is



● Iron — the balance, never listed by a standard — 99.5 % ● Mn — 0.3 % ● C — 0.1 % ● P — 0 % ● Traces & impurities · 0 %

Logarithmic scale, 0.01 % to 100 % — every value here compares directly, decade by decade.



The scale is logarithmic, not the element's raw share of the alloy — the only honest way to fit 0.01 % and 100 % in one picture, and it means every value here can be compared with every other.

### Predicted transformation temperatures

Not enough recorded composition to predict a transformation temperature for this grade — missing: Si, Ni, Cr, Mo.

## Mechanical properties

15 values across 3 conditions

| CONDITION · DIMENSION                     | RM<br>N/mm <sup>2</sup> | RE<br>N/mm <sup>2</sup> | A5<br>% | Z<br>%  | HB  |
|-------------------------------------------|-------------------------|-------------------------|---------|---------|-----|
| Pipe, GOST 10705-80                       | 314                     | 196                     | 25      | –       | –   |
| Steel cold-drawn , GOST 10702-78          | 372                     | –                       | 8       | 55      | –   |
| (cold-drawn, cold-worked) , GOST 10702-78 | –                       | –                       | –       | –       | 179 |
| Sheet GOST 4041-71                        | –                       | –                       | –       | –       | 114 |
| (annealing) , Sheet trick GOST 1577-93    | –                       | –                       | –       | –       | 137 |
| CONDITION · DIMENSION                     | RM<br>N/mm <sup>2</sup> |                         |         | A5<br>% |     |
| 4 - 14                                    | 270–410                 |                         |         | 32      |     |
| NORMALIZING                               | RM<br>N/mm <sup>2</sup> | RE<br>N/mm <sup>2</sup> | A5<br>% | Z<br>%  |     |
| 6 - 60                                    | 310                     | 185                     | 33      | 55      |     |

## Physical properties

8 values

| CONDITION · DIMENSION    | RHO<br>g/cm <sup>3</sup> | E<br>GPa | ALPHA<br>10 <sup>−6</sup> /K | LAMBDA<br>W/(m·K) | CP<br>J/(kg·K) | RHO_EL<br>nΩ·m |
|--------------------------|--------------------------|----------|------------------------------|-------------------|----------------|----------------|
| 20                       | 7.856                    | 186      | –                            | –                 | –              | –              |
| 100                      | 7.832                    | –        | 12.4                         | 58                | 466            | 190            |
| 200                      | 7.8                      | –        | 13.2                         | 54                | 479            | 263            |
| 300                      | 7.765                    | –        | 13.9                         | 49                | –              | 352            |
| 400                      | 7.73                     | –        | 14.5                         | 45                | 512            | 458            |
| 500                      | 7.692                    | –        | 14.9                         | 40                | –              | 584            |
| 600                      | 7.653                    | –        | 15.1                         | 36                | 567            | 734            |
| 700                      | 7.613                    | –        | 15.3                         | 32                | –              | 905            |
| 800                      | 7.582                    | –        | 12.1                         | 29                | –              | 1081           |
| 900                      | 7.594                    | –        | 14.8                         | 27                | –              | 1130           |
| 1000                     | –                        | –        | 12.6                         | –                 | –              | –              |
| PROPERTY                 | VALUE                    |          | UNIT                         |                   |                |                |
| Density                  | 7.85                     |          | g/cm <sup>3</sup>            |                   |                |                |
| Transformation point Ac1 | 732                      |          | °C                           |                   |                |                |
| Transformation point Ac3 | 870                      |          | °C                           |                   |                |                |

| PROPERTY                 | VALUE | UNIT |
|--------------------------|-------|------|
| Transformation point Ar3 | 854   | °C   |
| Transformation point Ar1 | 680   | °C   |

Technological properties

| PROPERTY           | VALUE                | UNIT |
|--------------------|----------------------|------|
| Weldability        | without limitations. |      |
| Flake sensitivity  | not predisposed      |      |
| Temper brittleness | not predisposed      |      |

Heat treatment

1 regimes

| STEP        | TEMPERATURE            | MEDIUM |
|-------------|------------------------|--------|
| Normalizing | Temperature not stated | —      |

Designations across standards

29 designations · 2 documented as identical

|                 |          |                 |                                 |
|-----------------|----------|-----------------|---------------------------------|
| Japan6          |          | Europe2         |                                 |
| SPH2A           | jis      | DD 12 G 1       | This grade's own name<br>din-en |
| SPHD            | jis      | UStW 23         | This grade's own name<br>din-en |
| SPHE            | jis      | China2          |                                 |
| SWRCH10K        | jis      | 10F             | gb                              |
| SWRCH10R        | jis      | ML10            | gb                              |
| SWRCH12R        | jis      | Russia / CIS2   |                                 |
| United States5  |          | 10kp            | gost                            |
| 1008            | aisi-sae | 10kn            | gost                            |
| 1010            | aisi-sae | Spain1          |                                 |
| 1012            | aisi-sae | AP12            | une                             |
| A621            | aisi-sae | International1  |                                 |
| 1010            | astm     | C10GC           | iso                             |
| France5         |          | Italy1          |                                 |
| 1C              | afnor    | FeP12           | uni                             |
| 2C              | afnor    | Czechia1        |                                 |
| FB10            | afnor    | 12010           | csn                             |
| FR10            | afnor    | United Kingdom3 |                                 |
| XC10            | afnor    | 040A10          | bs                              |
| United Kingdom3 |          | 14HR            | bs                              |
| 040A10          | bs       | 3HR             | bs                              |
| 14HR            | bs       |                 |                                 |
| 3HR             | bs       |                 |                                 |

**Note on use.** The data is compiled to the best of our knowledge from publicly available standards and manufacturer documentation. It replaces neither material testing nor an inspection document to EN 10204. Please request a mill certificate to EN 10204 2.1, 3.1 or 3.2 together with your enquiry. The standard in its current valid edition always prevails.

**Enquiry about FB10**  
Quotation, availability, mill certificate or a technical question — directly on the material page.

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**ISSUED**  
Aug 20, 2026