

Table 3-Mechanical properties at ambient temperature for flat and long products of steel grades and qualities with values for the impact strength

| Designation                             |                         | Minimum yield strength $R_{eH}^a$<br>MPa <sup>b</sup><br>Nominal thickness mm |            |            |            |             |              |              |              |                           | Tensile strength $R_m^a$<br>MPa <sup>b</sup><br>Nominal thickness mm |            |              |              |                           |
|---|-------------------------|---|------------|------------|------------|-------------|--------------|--------------|--------------|---------------------------|--|------------|--------------|--------------|---------------------------|
|   |                         | ≤16   | >16<br>≤40 | >40<br>≤63 | >63<br>≤80 | >80<br>≤100 | >100<br>≤150 | >150<br>≤200 | >200<br>≤250 | >250<br>≤400 <sup>c</sup> | <3   | >3<br>≤100 | >100<br>≤150 | >150<br>≤250 | >250<br>≤400 <sup>c</sup> |
| According<br>EN 10027-1<br>and CR 10260 | According<br>EN 10027-2 |   |            |            |            |             |              |              |              |                           |  |            |              |              |                           |
| S235JR                                  | 1.0038                  | 235   | 225        | 215        | 215        | 215         | 195          | 185          | 175          | .....                     | 360 to 510   | 360 to 510 | 350 to 500   | 340 to 490   | .....                     |
| S235J0                                  | 1.0114                  | 235   | 225        | 215        | 215        | 215         | 195          | 185          | 175          | .....                     | 360 to 510   | 360 to 510 | 350 to 500   | 340 to 490   | .....                     |
| S235J2                                  | 1.0117                  | 235   | 225        | 215        | 215        | 215         | 195          | 185          | 175          | 165                       | 360 to 510   | 360 to 510 | 350 to 500   | 340 to 490   | 330 to 480                |
| S275JR                                  | 1.0044                  | 275   | 265        | 255        | 245        | 235         | 225          | 215          | 205          | .....                     | 430 to 580   | 410 to 560 | 400 to 540   | 380 to 540   | .....                     |
| S275J0                                  | 1.0143                  | 275   | 265        | 255        | 245        | 235         | 225          | 215          | 205          | .....                     | 430 to 580   | 410 to 560 | 400 to 540   | 380 to 540   | .....                     |
| S275J2                                  | 1.0145                  | 275   | 265        | 255        | 245        | 235         | 225          | 215          | 205          | 195                       | 430 to 580   | 410 to 560 | 400 to 540   | 380 to 540   | 380 to 540                |
| S355JR                                  | 1.0045                  | 355   | 345        | 335        | 325        | 315         | 295          | 285          | 275          | .....                     | 510 to 680   | 470 to 630 | 450 to 600   | 450 to 600   | .....                     |
| S355J0                                  | 1.0553                  | 355   | 345        | 335        | 325        | 315         | 295          | 285          | 275          | .....                     | 510 to 680   | 470 to 630 | 450 to 600   | 450 to 600   | .....                     |
| S355J2                                  | 1.0577                  | 355   | 345        | 335        | 325        | 315         | 295          | 285          | 275          | 265                       | 510 to 680   | 470 to 630 | 450 to 600   | 450 to 600   | 450 to 600                |
| S355K2                                  | 1.0596                  | 355   | 345        | 335        | 325        | 315         | 295          | 285          | 275          | 265                       | 510 to 680   | 470 to 630 | 450 to 600   | 450 to 600   | 450 to 600                |
| S450J0 <sup>d</sup>                     | 1.0590                  | 450   | 430        | 410        | 390        | 380         | 380          | .....        | .....        | .....                     | .....  | 550 to 720 | 530 to 700   | .....        | .....                     |

Table 4-Mechanical properties at ambient temperature for flat and long products of steel grades and qualities with values for the impact strength (concluded)

| Designation                       |                      | Position of test pieces<br>a | Minimum percentage elongation after fracture <sup>a</sup> % |            |            |            |            |  |            |             |              |              |                                  |
|-----------------------------------|----------------------|------------------------------|---|------------|------------|------------|------------|--|------------|-------------|--------------|--------------|----------------------------------|
|                                   |                      |                              | L <sub>0</sub> =80mm<br>Nominal thickness mm                |            |            |            |            | L <sub>0</sub> =5.65 √S <sub>0</sub><br>Nominal thickness mm |            |             |              |              |                                  |
| According EN 10027-1 and CR 10260 | According EN 10027-2 |                              | ≤1  | >1<br>≤1.5 | >1.5<br>≤2 | >2<br>≤2.5 | >2.5<br>≤3 | ≥30<br>≤40   | >40<br>≤63 | >63<br>≤100 | >100<br>≤150 | >150<br>≤250 | >250° ≤400<br>only for J2 and K2 |
| S235JR                            | 1.0038               | l                            | 17  | 18         | 19         | 20         | 21         | 26   | 25         | 24          | 22           | 21           | .....                            |
| S235J0                            | 1.0114               |                              |   |            |            |            |            |  |            |             |              |              | .....                            |
| S235J2                            | 1.0117               | t                            | 15  | 16         | 17         | 18         | 19         | 24   | 23         | 22          | 22           | 21           | 21(l and t)                      |
| S275JR                            | 1.0044               | l                            | 15  | 16         | 17         | 18         | 19         | 23   | 22         | 21          | 19           | 18           | .....                            |
| S275J0                            | 1.0143               |                              |   |            |            |            |            |  |            |             |              |              | .....                            |
| S275J2                            | 1.0145               | t                            | 13  | 14         | 15         | 16         | 17         | 21   | 20         | 19          | 19           | 18           | 18(l and t)                      |
| S355JR                            | 1.0045               | l                            | 14  | 15         | 16         | 17         | 18         | 22   | 21         | 20          | 18           | 17           | .....                            |
| S355J0                            | 1.0553               |                              |   |            |            |            |            |  |            |             |              |              | .....                            |
| S355J2                            | 1.0577               |                              |   |            |            |            |            |  |            |             |              |              | 17(l and t)                      |
| S355K2                            | 1.0596               | t                            | 12  | 13         | 14         | 15         | 16         | 20   | 19         | 18          | 18           | 17           | 17(l and t)                      |
| S450J0 <sup>d</sup>               | 1.0596               | l                            | .....   | .....      | .....      | .....      | .....      | 17   | 17         | 17          | 17           | .....        | .....                            |