

## JIS G3462

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### ● Production Standard of JIS G3462

#### ● JIS G3462

JIS G3462 is a Japanese Industrial Standard that specifies the requirements for alloy steel tubes used for boiler and heat exchanger applications. These tubes are designed to withstand high temperatures and pressures, ensuring reliable performance in demanding environments. The standard covers dimensions, tolerances, mechanical properties, and chemical composition to ensure the tubes' durability and efficiency in heat transfer applications.

### ● Dimensions and Sizes of JIS G3462

|                   |                  |
|-------------------|------------------|
| <b>Standard</b>   | JIS G3462        |
| <b>Procedure</b>  | ERW, SMLS        |
| <b>Dimensions</b> | 15.9mm – 139.8mm |
|                   | 1/8" – 5"        |
|                   | DN8 – DN400      |
| <b>Thickness</b>  | 1.65mm – 25.4mm  |
|                   | SCH 10 – SCH 160 |

|                        |  |        |
|------------------------|--|--------|
| <b>Unit Length</b>     | 1.5 – 18 mtrs  |        |
| <b>Steel Grade</b>     | STBA12   | STBA23 |
|                        | STBA13   | STBA24 |
|                        | STBA20   | STBA25 |
|                        | STBA22   | STBA26 |
| <b>Surface Coating</b> | Varnishing, Black, Oiling, Hot Dip Galvanizing                                   |        |
| <b>End Type</b>        | Square cut, Bevelled, Threaded, Grooved  |        |
| <b>Joint Method</b>    | Fitting, Flange, Coupling, Clamp, Pipe Shoulder, Welding                         |        |
| <b>Pipe Machining</b>  | Welding, Bending, Hole Drilling, Punching, Swaging, Tapering, Flaring, Expanding |        |

### --Production Tolerance of JIS G3462

| Category of outside diameter | Tolerances on outside diameter   |                                   |   |   |
|------------------------------|----------------------------------|-----------------------------------|---|---|
|                              | Hot finished seamless steel tube | Cold finished seamless steel pipe | As electric resistance welded steel tube a) | Cold finished electric resistance welded steel tube |
| Under 25                     | -0.4                             | +0.1, -0.1                        | +0.15, -0.15                                | +0.1, -0.1  |
| 25 or over to and excl. 40   |                                  | +0.15, -0.15                      | +0.20, -0.20                                | +0.15, -0.15  |
| 40 or over to and excl. 50   |                                  | +0.20, -0.20                      | +0.25, -0.25                                | +0.20, -0.20  |
| 50 or over to and excl. 60   |                                  | +0.25, -0.25                      | +0.3, -0.3                                  | +0.25, -0.25  |
| 60 or over to and excl. 80   |                                  | +0.3, -0.3                        | +0.4, -0.4                                  | +0.3, -0.3  |

|                                |      |            |      |            |
|--------------------------------|------|------------|------|------------|
| 80 or over to and<br>excl. 100 |      | +0.4, -0.4 | -0.2 | +0.4, -0.4 |
| 100 or over to and<br>excl.120 | -0.8 | -0.2       | -0.4 | -0.2       |
| 120 or over to and<br>excl.160 |      | -0.4       | -0.6 | -0.4       |
| 160 or over to and<br>excl.200 | -1.4 | -0.8       | -0.8 | -0.8       |
| 200 or over                    | -2   | -1.2       | -1.2 | -1.2       |

| Tolerance                                     | Wall<br>thickness                    | Hot finished seamless<br>steel tube |             | Cold finished<br>seamless steel tube |            | Electric resistance<br>welded steel tube<br>a) |            |
|---|--------------------------------------|-------------------------------------|-------------|--------------------------------------|------------|--|------------|
|   |                                      | Outside diameter mm                 |             |                                      |            |  |            |
|   |                                      | Under 100                           | 100 or over | Under 40                             | 40 or over | Under 40                                       | 40 or over |
| Tolerance on<br>wall thickness                | Under 2                              | –                                   | –           | +0.4mm<br>0                          | +22% 0     | +0.3mm<br>0                                    | +18% 0     |
|   | 2 or over<br>to and<br>excl.2.4      | +40% 0                              | –           | +20% 0                               |            | +18% 0   |            |
|   | 2.4 or<br>over to<br>and<br>excl.3.8 | +35% 0                              | +35% 0      |                                      |            |  |            |
|   | 3.8 or<br>over to<br>and<br>excl.4.6 | +33% 0                              | +33% 0      |                                      |            |  |            |
|   | 4.6 or<br>over                       | +28% 0                              | +28% 0      |                                      |            |  |            |
| Tolerance on<br>wall thickness<br>deviation b | 5.6 or<br>over                       | Within 22.8 % of wall<br>thickness  |             | –                                    | –          | –  | –          |

## ●Chemical Composition of JIS G3462

| Chemical Composition Unit: % |              |              |              |            |            |               |              |
|------------------------------|--------------|--------------|--------------|------------|------------|---------------|--------------|
| Designation of Grade         | C            | Si           | Mn           | P          | S          | Cr            | Mo           |
| STBA 12                      | 0.10 to 0.20 | 0.10 to 0.50 | 0.30 to 0.80 | 0.035 max. | 0.035 max. | —             | 0.45 to 0.65 |
| STBA 13                      | 0.15 to 0.25 | 0.10 to 0.50 | 0.30 to 0.80 | 0.035 max. | 0.035 max. | —             | 0.45 to 0.65 |
| STBA 20                      | 0.10 to 0.20 | 0.10 to 0.50 | 0.30 to 0.60 | 0.035 max. | 0.035 max. | 0.50 to 0.80  | 0.40 to 0.65 |
| STBA 22                      | 0.15 max.    | 0.50 max.    | 0.30 to 0.60 | 0.035 max. | 0.035 max. | 0.80 to 1.25  | 0.45 to 0.65 |
| STBA 23                      | 0.15 max.    | 0.50 to 1.00 | 0.30 to 0.60 | 0.030 max. | 0.030 max. | 1.00 to 1.50  | 0.45 to 0.65 |
| STBA 24                      | 0.15 max.    | 0.50 max.    | 0.30 to 0.60 | 0.030 max. | 0.030 max. | 1.90 to 2.60  | 0.87 to 1.13 |
| STBA 25                      | 0.15 max.    | 0.50 max.    | 0.30 to 0.60 | 0.030 max. | 0.030 max. | 4.00 to 6.00  | 0.45 to 0.65 |
| STBA 26                      | 0.15 max.    | 0.25 to 1.00 | 0.30 to 0.60 | 0.030 max. | 0.030 max. | 8.00 to 10.00 | 0.90 to 1.10 |

## ●Mechanical Properties Tensile Strength and Yield Strength of JIS G3462

| Designation of Grade             | Tensile Strength N/mm <sup>2</sup> | Yield Point or Proof Stress N/mm <sup>2</sup> |
|----------------------------------|------------------------------------|---|
| STBA 12                          | 380 min.                           | 205 min.                                      |
| STBA 13                          | 410 min.                           |   |
| STBA 20                          |                                    |   |
| STBA 22                          |                                    |   |
| STBA 23                          |                                    |   |
| STBA 24                          |                                    |   |
| STBA 25                          |                                    |   |
| STBA 26                          |                                    |   |
| NOTE: 1 N/mm <sup>2</sup> =1 MPa |                                    |   |