

JIS G3454

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● Production Standard of JIS G3454

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JIS G3454 is a Japanese Industrial Standard that specifies the requirements for carbon steel pipes used for pressure service at moderate temperatures. These pipes are primarily used for transporting steam, water, gas, and other fluids, making them suitable for industries such as construction, engineering, and utilities. The standard covers pipe dimensions, tolerances, mechanical properties, and chemical composition to ensure their reliability and performance under pressure conditions.

● Dimensions and Sizes of JIS G3454

| | |
|---------------------|-----------------------------------------|
| Standard | JIS G3454 |
| Appilication | Carbon Steel Pipes for Pressure Service |
| Steel Grade | STPG370(STPG38), STPG410(STPG42) |

| | | | | | | |
|------------------------------|-------------------------------------|-----------------------|-----------------|-----------------------------|-------------------------|-------|
| Manufacturing | Seamless and ERW | | | | | |
| OD Range | 15A – 350A or over | | | | | |
| WT Range | SCH10,SCH20,SCH30,SCH40,SCH60,SCH80 | | | | | |
| Chemical Composition | – | C | Si | Mn | P | S |
| | STPG370 | ≤0.25 | ≤0.35 | 0.3-0.9 | ≤0.04 | ≤0.04 |
| | STPG410 | ≤0.30 | ≤0.35 | 0.3-1 | ≤0.04 | ≤0.04 |
| Mechanical Properties | – | Tensile Strength(Mpa) | | Yield Strength(Mpa) | | |
| | STPG370 | 373 | | 216 | | |
| | STPG410 | 412 | | 245 | | |
| Tolerance | – | Tolerance on Diameter | | Tolerance on Wall Thickness | | |
| | Hot-finished Seamless | ≤40A [0.5mm] | | Under 4mm | +0.6mm,-0.5mm | |
| | | 50A≤OD≤125A [1%] | | 4mm or over | +15%,-12.5% | |
| | | 150A [1.6mm] | | | | |
| | | 200A or over [0.8%] | | | | |
| | Cold-finished Seamless and ERW | 25A or under [0.3mm] | | under 3mm | +/-0.3mm | |
| 32A or over [0.8%] | | 3mm or over | +/-10% | | | |
| Required Test | Chemical Analysis | Tensile Test | Flattening Test | Bending Test | Hydrostatic Test of NDT | |

●Chemical Composition of JIS G3454

| Chemical Composition Unit:% | | | | | |
|-------------------------------------------------------------------------------|-----------|-----------|--------------|------------|------------|
| Symbol of Grade | C | Si | Mn | P | S |
| STPG370 | 0.25 max. | 0.35 max. | 0.30 to 0.90 | 0.040 max. | 0.040 max. |
| STPG410 | 0.30 max. | 0.35 max. | 0.30 to 1.00 | 0.040 max. | 0.040 max. |
| Other alloy elements than those given in this table may be added as required. | | | | | |

●Mechanical Properties Tensile Strength and Yield Strength of JIS G3454

| Tensile Strength, Yield Point Or Proof Stress, And Elongation | | | | | | |
|---------------------------------------------------------------|------------------------------------|----------------------------------------|-------------------------------------|------------------|-----------------------|----------------------------|
| Symbol of Grade | Tensile Strength N/mm ² | Yield Point or proof N/mm ² | Elongation % | | | |
| | | | Test pieces No.11 Test pieces No.12 | Test pieces No.5 | Test pieces No.4 | |
| | | | | | Parallel to pipe axis | Perpendicular to pipe axis |
| STPG370 | 370 min. | 215 min. | 30 min. | 25 min. | 28 min. | 23 min. |
| STPG410 | 410 min. | 245 min. | 25 min. | 20 min. | 24 min. | 19 min. |
| NOTE: 1 N/mm ² =1 MPa | | | | | | |