EN-GJS-450-10, ASTM A536 65-45-12, Ductile Iron, SG Iron Chemical Composition, Mechanical and Physical Properties

EN-GJS-450-10 (ASTM A536 65-45-12) is an excellent ductile iron (SG iron) material grade. It has comparative strength, high elongation, and good impact resistance. So, this cast iron grade has very wide application.

Our Dandong foundry has producing this material grades for many years, and herein, we share its chemical composition and physical properties.

1. Equivalent Material Grades of Ductile Iron GJS-450

The equivalent grades of EN 1563 EN-GJS-450-10 are ASTM A536 65-45-12, FCD400, FGS400 60-42-10, QT450-10, ISO 450-10. Although some grade just require elongation 10%, the iron foundries just need to make the elongation a little higher, then they will meet the requirement.

2. Chemical Composition of SG Iron, Ductile Iron GJS-450

According to all international material standards, the chemical composition should not be taken as the inspection when the clients have special requirements. However, by our experience, the approximate chemical composition should be as C: 3.50-4.00, Si: 2.20-2.90, Mn: 0.3-0.6, P: 0.03-0.06, S: 0.02-0.040, Mg: 0.020-0.060.

3. Mechanical & Physical Properties of Ductile Iron GJS-450

Tensile Strength ≥ 450 MPa. Yield Strength ≥ 310 MPa. Elongation ≥ 10%.

As for A536 65-45-12, its elongation ≥ 12%. Other requirements will be as same as GJS-450. There is no strict stipulation to the hardness of GJS-450, however, normal hardness range is 160-190 (Hardness).

4. Main Application of Ductile Iron GJS-450

Because of the comparatively high elongation, this GJS-450 ductile iron could be used for producing multi-functional castings. In addition, it has good low temperature impact resistance, and good hardness, so it has been widely used for producing plough, furrow plough, plough pile, differential shell, valve body, and high pressure cylinder.

The followings are some ductile iron castings we produced.