# DAIKOWM 120

GMAW

**HIGH YIELD STRENGTH STEELS**
120ksi

## DESCRIPTION

**Low alloy solid wire for high yield strength steels**

High-strength, medium alloy solid wire electrode for shielded arc welding of quenched and tempered fine grained structural steels. It is designed for those applications requiring 120 Ksi minimum tensile strength and good charpy v-notch toughness, such as when welding HY-80, HY-100, Strenx® 900, S890QL, S960Q. These materials are used in lifting and handling machines, bridges, tanks, shipbuilding, railway sector, mines, frames, crane fabrication, trailer construction, and other structural applications involving higher strength materials.

## SPECIFICATIONS

| | | | |
|---|---|---|---|
| **ISO 16834-A** | G 89 Mn4Ni2,5CrMo | **AWS A5.28** | ER120S-G |
| **DIN** | - | **Werkstoff Number** | - |
| **Certifications** | - | **Shielding** | M20, M21 |
| **Positions** | PA, PB, PC, PD, PE, PF, PG | **Current** | DC+ |

## ASME QUALIFICATIONS

| | |
|---|---|
| F-No (QW432) | 6 |
| A-No (QW442) | - |

## FERRITE

-

## PREN

-

## HARDNESS

-

## CHEM. COMP. %

| | DEFAULT |
|---|---|
| C | 0.11 |
| Mn | 1.9 |
| Ni | 2.4 |
| Cr | 0.6 |
| P | 0.01 |
| S | 0.01 |
| Mo | 0.6 |
| Si | 0.8 |
| Cu | 0.15 |

## MECHANICAL PROPERTIES

| | MIN | VARIANT |
|---|---|---|
| Tensile strength $R_m$ MPa | 940 | 980 |
| Yield strength $R_{p0.2}$ MPa | 890 | 890 |
| Elongation A ($L_0$=5$d_0$) % | 15 | 16 |
| Impact Charpy ISO-V | - | 60J @ -40°C |
| Impact Charpy ISO-V | - | - |

## WELDING PARAMETERS

| | 1 mm | 1.2 mm |
|---|---|---|
| Ampere | 170A - 220A | 180A - 300A |
| Voltage | 24V - 28V | 26V - 30V |
| Packaging | Ø 0,8÷1,6mm | Ø 0,8÷1,6mm |
| Packaging Type | Drums, B300, D200 and D100 spools. | Drums, B300, D200 and D100 spools. |





DAIKO

# 120ksi

DESCRIPTION



## APPLICATION

Designed for applications demanding a minimum tensile strength of 120 Ksi and excellent Charpy V-notch toughness, these consumables are suitable for diverse structural uses. From lifting machines to shipbuilding, railway sectors to crane fabrication, they find application in various high-strength scenarios. Preheat as per base material and thickness; generally, a 100°C minimum preheat is needed for materials requiring these high-strength consumables. Exercise caution with some HSLA steels, as interpass temperatures above 200°C may compromise strength and toughness. Post-weld heat treatment (PWHT) depends on the base material and application.

## ALLOY TYPE

Mn-Ni-Mo low alloy consumables for welding high strength steels with ultimate tensile strength up to 825 MPa (120 ksi).

## MICROSTRUCTURE

The microstructure of all the consumables is predominantly ferrite; some will contain high proportions of acicular ferrite for optimum aswelded toughness

## MATERIALS

This material is used for a variety of high strength steels. HY-80, HY-90, HY- 100. S890 and higher strength grades, thermo mechanically treated fine grain steels.

**EN W.Nr.**: S890QL, S960Q.

**ASTM**: A 709 Gr. 100 Type B, E, F, H, Q, HPS 100W.

**PROPRIETARY**: Strenx® 900 (SSAB), Alform® 900 X-treme (voestalpine).