



A Nickel Based Blended Powder
for the Laser Cladding Process

LaserClad®

41460



- Medium matrix hardness allows for use in a wide variety of industrial applications
- Excellent for combined impact and abrasion applications such as farm implements and other ground engaging equipment
- Uniform powder size distribution for trouble free operation
- Available with 3 different carbide types

LaserClad® 41460

LC 41460 is a gas atomized nickel based alloy designed for use with the laser cladding (LC) process. LC 41460 is blended with 60% (by weight) of tungsten carbide (WC) to form a composite alloy.

LC 41460 is available with 3 different carbide types:

1. 41460-CWC: 60% Cast Tungsten Carbide
2. 41460-MWC: 60% Macrocrystalline Tungsten Carbide
3. 41460-SWC: 60% Spherical Tungsten Carbide

The medium hard matrix is developed for those applications where high load stresses from impact are encountered while the WC offers superior abrasion and erosion resistance.

The coatings produced are hard, dense and especially resistant to low stress abrasion and erosion. The chemistry and particle size of LC 41460 is carefully controlled to ensure consistent high quality coating properties.

TECHNICAL DATA

Typical Values	
Matrix Hardness:	40 HRC
Carbide Hardness:	(VHN300)
CWC:	2200
MWC:	2100
SWC:	3000
Deposit Density:	13.2 g/cm ³ (0.476 lb/in ³)
Max. Service Temperature:	650°C (1200°F)
Hall Flow rate:	13-17 sec/50g

Available Carbide Types:

CWC: W₂C-WC (angular)

MWC: WC (angular)

SWC: W₂C-WC (angular)

Nominal Composition: WC (60%), C, Cr, Si, B, Ni

PROCEDURE FOR USE:

Remove damaged material. Clean areas to be welded. Match heat input during welding to component dimensions. Follow the prepared welding procedure for the specific base metal chemistry. Keep dilution with base metal low. Allow workpiece to slowly cool upon completion of welding.

It is important that laser energy be kept as low as possible to maintain WC integrity, while maintaining a well bonded overlay.

Coatings of LC 41460 can be finished by grinding.

Please contact your Eutectic Surface Coatings Specialist for more information.

TYPICAL APPLICATIONS

The overlay offers excellent resistance to abrasion, erosion, corrosion, galling and gauging on carbon steels, stainless steels, cast iron and nickel alloys.

41460-CWC: Most commonly used WC on the market for severe wear from abrasion and/or erosion. Generally used for low stress abrasion in Mining and Mineral Processing environments. Due to its eutectic structure, it is recommended that low welding currents are used to minimize carbide dissolution.

41460-MWC: A single crystal WC that withstands the intense heat of arc welding better than CWC. Wear performance and applications are similar to CWC.

41460-SWC: Primarily used where high stress (2-body) abrasion is encountered. Applications include crushing equipment, track undercarriage, drill systems.

