Elehard® 350-GP

Hardfacing electrode

Classification

DIN 855-83 : E1-UM- 350-GP

Temperature Range

Pressure parts

Oxidation resistance

General description

Can be used both downhand and out of position, although the flat position is preferred
Arc characteristics are excellent with very low spatter levels
The electrode coating permits the use of the drag or contact welding technique
Good arc restriking

Complementary products

Elehard® 350-GP produces a crack-free wear resistant deposit with a hardness of 31-38 HRc (295-350 HB) depending on dilution and number of layers. It is particularly suitable under conditions of moderate abrasion and friction, combined with resistance to impact. Ideally suitable for applications involving rolling, sliding and metal to metal wear. It may also be used as a final overlay on parts which need to be machined or as a build-up layer for other hardfacing materials.

Typical applications include:

Buildup:	Hardfacing:
Shovel and bucket lips	Crane and mine car wheels
Pump impellers and housings	Tractor rolls, idlers, links and sprockets
Dredge and shovel bucket teeth	Cable drums
Mill and crushing hammers	Roller guides

Mechanical properties, all weld metal

	Typical hardness values
1 Layer	31 HRc (295HB)
2 Layer	35 HRc (330HB)
3 Layer	38 HRc (350HB)

Welded on Mild Steel Plate (12 mm)

Packaging, available sizes and identification

	Diameter (mm)	3.2	4.0	5.0	6.0
	Length (mm)	350	350	450	450
Unit:	Pieces / unit (nominal)	65	44	23	-
Box	Net weight/unit (kg)	2.5	2.5	2.5	2.5

Identification Imprint: Elehard® 350-GP Tip colour: black

Elehard® 350-GP : rev.EN 20

Elehard® 350-GP

Additional information

When welding with Elehard® 350-GP, DC+ is preferred for most applications, although AC also provides satisfactory results. The bead width should be limited to between 12 - 20mm for all electrode diameters when applying a weaving technique. Narrow stringer beads are preferred for edge and corner buildup.
All workhardened base material should be removed prior to applying Elehard® 350-GP in order to prevent embrittlement and cracking.
A preheat and interpass temperature of 150-250°C is necessary to prevent cracking, especially on large complex or high restrained components. The component should be completed without interruptions, however, if interruptions are unavoidable the component should be preheated again prior to welding.
The deposited weld metal can be machined to exact dimensions using high speed or carbide cutting tools.
There is no limit to the deposit buildup with this electrode.
Elehard® 350-GP exhibits good resistance to spalling and peeling and moderate resistance to gouging and galling. If gouging is severe then Elehard® 250-KR or Elehard® 250-KP would be more appropriate because of the higher work hardening effect. If galling is more severe then Elehard® 55-G or Elehard® 400-G would be preferred.

Welding positions

ISO/ASME	PA/1G	PB/2F	PC/2G	PF/3G up	PE/4G	PF/5G up

Current type

AC /DC electr. +

Chemical composition (w%),typical,all weld metal

C	Mn	Si	Cr	Mo
0.2	0.8	1.0	1.5	0.5

Additional information

In the as welded condition the microstructure consists mainly of martensite with some bainite

Calculation data

Size Diam.x length (mm)	Current range (A)
3.2x350	90-130
4.0x350	140-180
5.0x450	180-220
6.0x450	220-260

Complementary products

Complimentary products include flux cored wire Hard-Revishield®350-GPS.