WALLCOLMONOY
SURFACING ALLOYS

Colmonoy® 49W-H Applied by HVOF to a Glass Plunger

Colmonoy® 48W-H, 49W-H, 50W-H, 55W-H

Nickel-Based Hard-Surfacing Alloys for Dense Coatings That Resist Abrasive, Erosive and Metal to Metal Wear

Description:

Colmonoy® 48W-H, 49W-H, 50W-H, 55W-H alloys are nickel-based hard-surfacing powders containing tungsten carbide particles. Colmonoy® 48W-H, 49W-H and 50W-H, when deposited by HVOF techniques, can achieve a hardness above **Rockwell C 55**. However, Colmonoy® 55W-H can achieve a hardness above **Rockwell C 60.**

Colmonoy® 48W-H, 49W-H, 50W-H, 55W-H alloys are designed for the hard-surfacing of glass industry plungers.

Coatings of Colmonoy® 48W-H, 49W-H, 50W-H, 55W-H are dense and resist abrasive, erosive and metal to metal wear at temperatures up to 540°C (1000°F).

Nominal Composition - % by Weight:

Colmonoy® Alloy	B	C	Cr	Fe	Co	Si	W	Ni
48W-H	1.7	2.3	7.8	2.0	4.0	2.6	27.5	Bal
49W-H	1.3	2.4	7.5	2.3	4.6	2.3	31.0	Bal
50W-H	1.6	2.5	7.0	2.3	5.0	2.2	33.8	Bal
55W-H	1.4	3.0	6.0	1.8	6.0	1.9	41.0	Bal

Application Methods:

Colmonoy® 48W-H, 49W-H, 50W-H, 55W-H alloys alloys are easily applied to all steels having less than .25% carbon, grey cast iron; Meehanite, malleable, ingot and wrought iron; nickel, Monel[a] alloy 400, Inconel[a] alloy 600, Nichrome, Chromel[b]. Most high-temperature alloys can be overlaid without special precautions.

Steel having more than .25% carbon can also be overlaid, but requires controlled slow cooling after fusion, in suitable insulation such as Sil-O-Cel, mica, etc. Do not apply to ferrous metals that require subsequent hardening and tempering, because the dimensional change associated with the formation of martensite will crack the deposits of Colmonoy® 48W-H, 49W-H, 50W-H, 55W-H alloys. Hardenable base metals may be overlayed, but must be annealed isothermally after uniform austenitising to prevent cracking of the deposits of Colmonoy® 48W-H, 49W-H, 50W-H, 55W-H alloys. (Consult Technical Services for further details).

Safety:

When handling powders do so in such a way to avoid creating a dust cloud; avoid inhalation or contact with skin or eyes. Conduct coating operations in a properly ventilated area. For more information, consult 11.8 (Ventilation), AWS Thermal Spraying: Practice, Theory, and Application available from American Welding Society, OSHA Safety and Health Standards available from U.S. Government Printing Office, and the manufacturer's Safety Data Sheet (SDS).

Warning: Thermal spray torches and heating torches used for application of this product utilize compressed gasses or liquid fuels including oxygen, air, flammable fuel gas, or flammable liquid fuel. Follow your employer's safety procedures when using and handling these gases and equipment. Infrared and ultraviolet radiation (light) emitted from flame and hot metal can injure eyes and burn skin. HVOF and HVAF systems can produce noise levels that can damage hearing. Use appropriate personal protective equipment.

Storage Requirements:

Keep thermal spray powders in a closed container and protect against moisture pick-up. The containers should be tumbled before using the powder. If moisture is absorbed from the atmosphere, it can be removed and flowability can be restored by drying the powder, with the seal removed and lid loosened, at 66-93°C (150-200°F) for two hours prior to use.

The information provided herein is given as a guideline to follow. It is the responsibility of the end user to establish the process information most suitable for their specific application(s). Wall Colmonoy assumes no responsibility for failure due to misuse or improper application of this product, or for any incidental damages arising out of the use of this material.

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