



Iron powders for welding applications

For improved efficiency and welding performance

Höganäs sponge iron powders for welding applications

Cost effective manufacturing of welding electrodes that meet today's quality demands requires raw materials of high, consistent quality and reliable suppliers. From our 70 years of experience as a supplier of iron powders for welding applications, we have acquired extensive knowledge and understanding of the needs and demands of the welding industry. Our optimum combination of reliable services and consistent high-quality products help producers of welding consumables gain an edge on a highly competitive market.

The Höganäs sponge grades for welding applications are renowned for their high and uniform quality. Our wide range of powders with varying chemical and physical properties, all with low levels of impurities and narrow specifications, helps enhancing the characteristics and performance of covered electrodes as well as flux-cored and metal-cored wires.

Skilful electrode design in combination with the Höganäs sponge iron powders result in excellent welding characteristics.

Improved welding characteristics

It is a well-known fact that additions of iron powder to covered electrode coatings contribute to improved welding characteristics. The results are often a smoother and more stable arc, lower spatter losses, improved re-striking as well as good bead appearance and easy slag removal. With the Höganäs sponge powders, these advantages are often more notable.

Improved weld metal quality

Additions of high-purity iron powders in welding electrodes have a positive effect on final weld quality. This is particularly important for electrodes used for critical applications and where the demands on mechanical properties are high.

Increased efficiency

Additions of iron powder to covered electrode coatings increase the metal recovery. Moreover, by diluting the electrode coating with iron powder, the heat generated during welding will be more efficiently utilised. Iron powder additions also allow covered electrodes to operate at higher amperages without overheating. All in all, this results in improved efficiency and higher deposition rates.



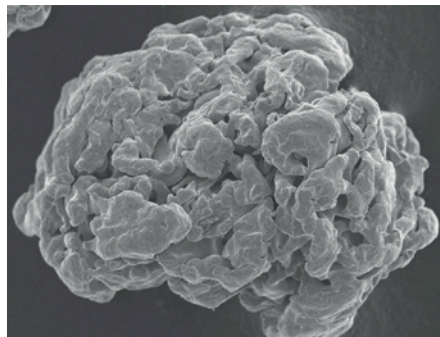
Why Höganäs powders?

Benefits:

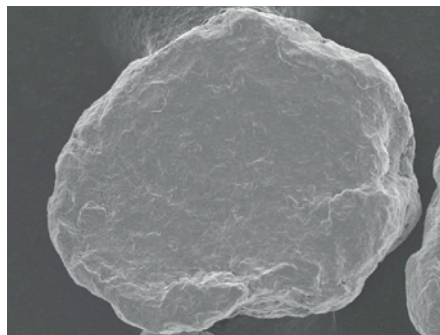
- Wide range of iron powders developed for welding applications
- Narrow specifications
- Consistent chemical and physical properties
- Low level of impurities
- Efficient logistics solutions and smart packaging

Powder grades for welding applications

As a key component in the production of a wide range of welding consumables, the characteristics of iron powders often have a direct influence on both welding properties and final weld metal quality. Our sponge grades are distinguished by particle size distribution, chemical composition, particle morphology and apparent density. Choosing iron powders with suitable characteristics for a given application will result in enhanced efficiency and overall welding performance.



An irregular surface and microporous structure provides a soft and stable arc as well as easy re-striking.



Coarse particle size and a smooth surface facilitates the extrusion of high-yield electrodes.

Typical powder characteristics

Powder grade	W100.25	W100B	W60.28LNC	W40.24	W40.29	W40.37	W40.37COX	W40.37OX
Apparent density, g/cm ³	2.4	2.4	2.9	2.5	2.9	3.7	3.8	3.8
Particle size distribution, %								
500µm				0	0	0	0	0
300-500µm			0	4	6	12	12	12
212-300µm	0	0	5	16	18	23	23	23
150-212µm	2	2	35	37	32	29	29	29
75-150µm	55	55	55	40	41	32	32	32
-75µm	43	43	5	3	3	4	4	4
-45µm	20	20	-	-	-	-	-	-
Chemical analysis, %								
H ₂ -loss	0.15		0.08	0.18	0.17	0.27	0.90	0.95
C	0.01	0.05	0.004	0.04	0.04	0.05	0.09	0.02
S	0.005	0.005	0.005	0.008	0.008	0.008	0.008	0.008
P	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Si	0.05	0.10	0.07	0.07	0.07	0.07	0.07	0.07
Mn	0.03	0.04	0.03	0.04	0.04	0.04	0.04	0.04
Other		B 1.0	N 8 ppm					

Power of Powder®

Metal powder technology has the power to open up a world of possibilities. The inherent properties of metal powders provide unique possibilities to tailor solutions to match your requirements. This is what we call Power of Powder, a concept to constantly widen and grow the range of metal powder applications.

With its leading position in metal powder technology, Höganäs is perfectly placed to help you explore those possibilities as your application project partner.

Power of Powder is being applied far beyond its traditional role in the production of components for vehicles. Iron powder is used in food fortification to combat anaemia. Nickel powders are vital ingredients in valve coatings to enhance wear resistance. Specially formulated iron-based powders offer new solutions for high-temperature brazing. Soft Magnetic Composites with 3D magnetic properties are opening the way for innovative electric motors. In fact, metal powder technology generates virtually endless possibilities.

To find out how you can apply the Power of Powder, please contact your nearest Höganäs office.



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