

CARBUDES 2300® SINTERED SILICON CARBIDE

A new generation of ceramics featuring hardness of up to 2300 Vickers, excellent chemical attack resistance and outstanding resistance to frictional wear among their key properties.

TECHNICAL DATA

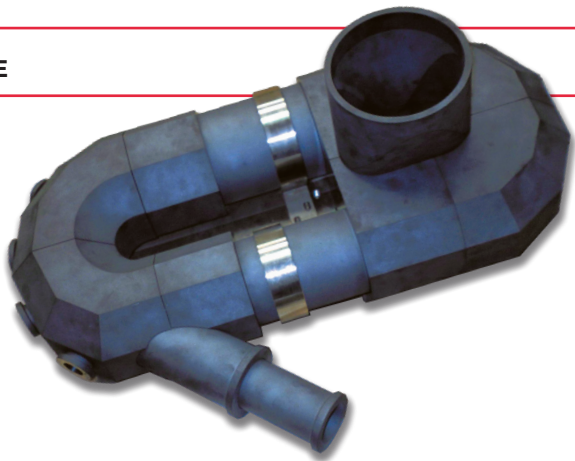
Hardness (average)	Density gr/cm³	Thermal conductivity	Thermal expansion	Working temperature
2300 Vickers	3,15	115 W/m.K (20 a 600°C)	4.2x10 ⁻⁶ K ⁻¹ (20 a 600°C)	1400°C máximo

SUPPLY OPTIONS
Custom-made parts, pipes, impellers, ducts, mechanical seals, diffusers, hydrocyclones, etc.

CHEMICAL RESISTANCE

Hydrochloric Acid HCl (conc.36%)	Zinc chloride ZCl (conc.60%)	Nitric Acid HNO ₃ (conc.65%)	Ammonium Nitrate HCl (conc.50%)	Sulphuric Acid H ₂ SO ₄ (conc.50%)	Sulphuric Acid H ₂ SO ₄ (conc.98%) HCl sulphuric (conc.36%)	Phosphoric Acid H ₃ PO ₄ (conc.85%)	Hydrofluoric Acid HF (conc.40%)	Sodium hydroxide NaOH (conc.30%)	Potassium hydroxide KOH (conc.20%)	Sodium chloride NaCl (cold saturated solution) Cl (conc.36%)	Potassium Chloride KCl (cold saturated solution)
CARBUDES	CARBUDES	CARBUDES	CARBUDES	CARBUDES	CARBUDES	CARBUDES	CARBUDES	CARBUDES	CARBUDES	CARBUDES	CARBUDES
20°C	50°C	20°C	50°C	20°C	50°C	20°C	50°C	20°C	50°C	20°C	50°C
+	+	+	+	+	+	+	+	+	+	+	+

+ No corrosion (+) Possible corrosion o Corrosion appears



DURCOP 1300® TUNGSTEN CARBIDE

A highly abrasion- and impact-resistant product, available in the following forms: grinding balls, tiles from 2 mm thickness onwards, shaped components and piping. Tungsten carbide is a versatile, long-lasting material that can be applied either using adhesives or by welding, depending on the working conditions.

TECHNICAL DATA

Composition	Density gr/c m³	Hardness (average)	Flexural strength	Working temperature
Wc balance Co 13% TaNbC 1%	14.40	1300 Vickers	3000 MPa	600°C máx.



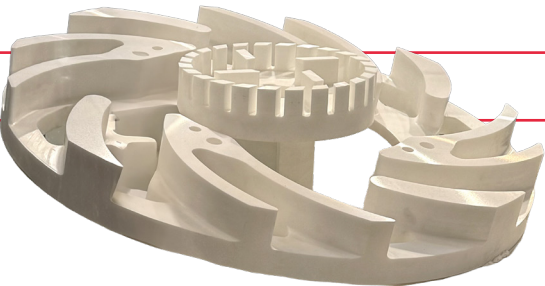
ZIRALDES 1250/1310® HIGH-DENSITY TEC. CERAMIC

Ceramic developed to protect surfaces against wear caused by abrasion and impact across a range of industries, such as mining, energy and transport. It combines mechanical strength, durability and ease of application, ensuring a long service life under extreme conditions.

TECHNICAL DATA

Product	Hardness (average)	Density gr/cm³	Fracture resistance	Compressive strength	Flexural strength	Working temperature	Chemical resistance
Z 1250®	1250 Vickers	5,65	12,5	850 MPa	290 MPa	1000 °C (máx.)	High, against strong acids and alkalis
Z 1310®	1310 Vickers	6	6	5000 MPa	1100 MPa	1550-2600°C	

ZIRALDES 1250® is used in mining, the energy industry and transport to protect and line industrial equipment such as hoppers, chutes, ducts and cyclones, reinforce loading and unloading systems, optimise the conveying of solid materials in production lines and ensure resistance to abrasion and impact. ZIRALDES 1310® is mainly used in high-power devices, tubes, thermal insulation, high-temperature processes and other applications requiring both thermal conductivity and thermal insulation simultaneously.

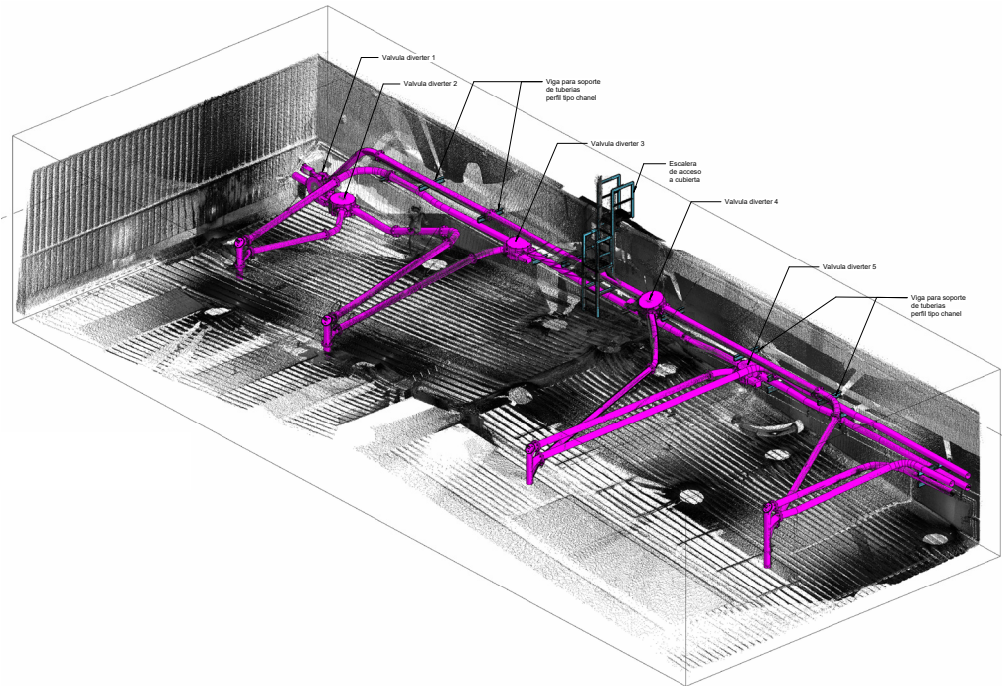


REVERSE ENGINEERING

At Tecnodesgast we offer a **reverse engineering service based on high-definition 3D scanning**, using terrestrial scanners and drones to generate accurate point clouds that faithfully reproduce the real geometry of the installation.

From this digital model we produce precise drawings and measurements, providing a reliable basis to plan improvements, replacements or expansions, **reducing errors and downtime during the engineering phase**.

Service available **upon quotation** depending on the complexity of each project.

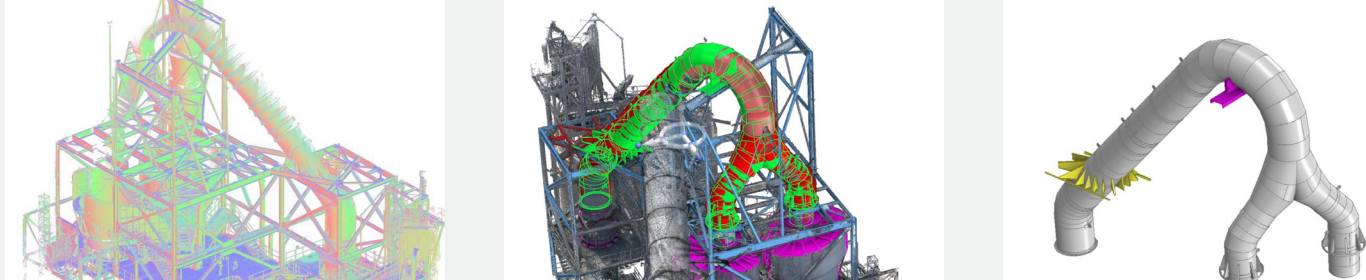


↓ Linings & Plates Brochure



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ALUDES 1500®

92% SINTERED ALUMINA

Product with high resistance to abrasion, it can be used for: Grinding balls, tiles with thicknesses from 1.5 mm upwards. Shaped parts and pipes. Sintered alumina is a versatile, long-lasting product, which can be applied with adhesives or welding, depending on the working conditions.

TECHNICAL DATA					
Composition	Density gr/cm³	Hardness average	Thermal conductivity	Thermal expansion	Working temperature
Al2 O3 92%	3.65	1500 Vickers	21 W/m.K	8.2x10 ⁻⁸ K1 20 a 600°C	1000°C maximum

Square tiles supplied on paper or rubber backing

Pannels 500x500mm
Square tiles 20x20 mm

Thickness	Standard plain tales / size mm				Available with hole
6 mm	100x25	150x50	100x100	150x100	
13 mm	100x25	150x50	100x100	150x100	
25 mm		150x50	100x100	150x100	
50 mm			100x100	150x100	

BASALDES 800®

FUSED CAST BASALT

Created from selected natural basalt melted at 1300°C which is subsequently recrystallised, giving it high resistance to abrasion, chemical attack and improved sliding.

TECHNICAL DATA					
Hardness (average)	Density gr/cm³	Abrasion resistance	Thermal conductivity	Thermal expansion	Working Temperature
720-800 Vickers	2,90	3-4 cm³ / 50 cm² (máx.) (DIN 52108)	1,1-1,7 W/m.K	9 x 10 ⁻⁶ K ⁻¹ 2-400 °C	400 °C (máx600°C without sudden changes)

ANALYSIS (average)									
Al ₂ O ₂	Zr O ₂	Si O ₂	Fe ₂ O ₃ y Fe O	Ca O	Mg O	K ₂ O	Na ₂ O	Ti O ₂	
Ca O	--	43-55%	9-14%	10-12%	8-12%	3-5%	3-5%	2-3%	

ZIRDES 2000®

FUSED ALUMINA

ZIRDES is a product obtained from a triphasic system composed of corundum in a vitreous phase. The final product exhibits excellent properties, particularly high hardness, resistance to elevated temperatures and chemical corrosion.

TECHNICAL DATA					
Hardness (average)	Density gr/cm³	Abrasion resistance	Thermal conductivity	Thermal expansion	Working Temperature
2000 Vickers	3,5	0,75-1 cm³ / 50 cm² (máx.) (DIN 52108)	4,4W/m.K	8 x 10 ⁻⁶ K ⁻¹ 0-400 °C	Normal: 1400 °C (máx)

Standard TILES		TILES with holes		Hexagonal TILES	
DIMENSIONS (mm)	THICKNESS (mm)	DIMENSIONS (mm)	THICKNESS (mm)		
200 x 100 200 x 200 250 x 250 300 x 300	22, 30, 40, y 50	200 x 100 200 x 200 250 x 250	30	ø 200 inscribed	Thickness 30 mm

On request: Radial Tiles and Industrial Floor Tiles with different patterns with anti-slip surface.

INOXDES 210/420/550/660®

WEAR RESISTANT STEEL PLATES
BI-METALLIC WEAR RESISTANT STAINLESS STEEL

In cases of wear from moisture and high slipperiness, wear-resistant stainless steel is the ultimate alternative. The hardness of "INOXDES 424®" is almost 3 times higher than that of conventional stainless steel, and the hardness of "INOXDES 660®" is 10 times higher.

TECHNICAL DATA FOR WEAR RESISTANT STEEL PLATES		
Product	Hardness average	Chemical Analysis
INOXDES 210/420®	180-420 Vickers	Carbide 12-15 %

TECHNICAL DATA FOR BI-METALLIC WEAR RESISTANT STAINLESS STEEL			
Product	Hardness average	Chemical Analysis	TEMPERATURE
INOXDES 550/660®	520-660 Vickers	Carbide 28-35 %	500-800 °C

Possible Base Sheets in Stainless Steel Inox-304 and Inox-316

CROMDES 700/800/850®
TUNGDES 2300®

BIMETALIC SHEET

Bimetallic steel with high resistance to abrasion and impact, suitable for operating temperatures up to 800°C..

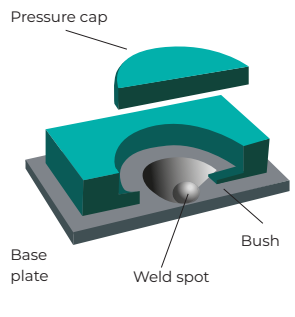
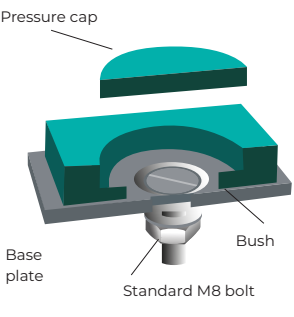
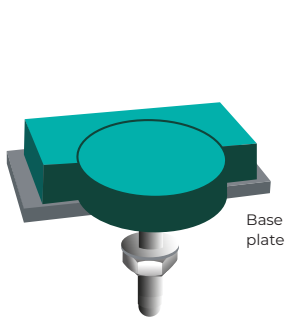
TECHNICAL DATA		
DUREZA (media)	ANÁLISIS	TEMPERATURA TRABAJO
de 700 a 950 Vickers	C-Cr-Mo-Nb-V-W-B	de 500 a 800°C
Chapa Base	DEPOSICIÓN	medidas (mm)
de 2 a 25mm	de 2 a 20mm	2950x1400 2950x2100

POLIDES 86/88/92®

POLYURETHANE PLATES

Product with properties of high resistance to abrasion and impact and excellent slipperiness.

TECHNICAL DATA						
Hardness	Density	ABRASION DIN 53516	FRICTION COEFICIENT	COLOURS	thickness mm	Size mm
86 shore A	1,20 gr/cm³	18 mm³	0,25 in dry	Red	2, 3, 4, 5, 6, 8,	3000x500
88 shore A	1,20 gr/cm³	22 mm³	0,25 in dry	Green	10 , 12, 15,20,	2000x1000
92 shore A	1,20 gr/cm³	31 mm³	0,19 in dry	Orange	25, 30	3000x1200

TYPES		
SUJECIÓN SOLDADURA	SUJECIÓN TORNILLO ROSCADO	SUJECIÓN TORNILLO ROSCADO
		

 **ANTI-CLUMPING**
Prevents material adhesion issues

 **NOISE REDUCTION**
Reduces noise

 **SELF-EXTINGUISHING**
Supply of flame-retardant material on request

HARDES 400/450/500®

WEAR RESISTANT STEEL PLATES

Steel with anti-wear alloy and thermo-mechanical hardness in the core, withstands temperatures up to 400°C and processing up to 900°C. Can be used in crushers, blades, mixers, vibratory feeders...

TECHNICAL DATA		
Hardness (average)	ANALYSIS	TEMPERATURA TRABAJO
from 400 to 500 Vickers	C-Mn-Cr-Mo-Ni	450°C
Chapa	dimensions (mm)	
from 3 to 150mm	3000x1500 6000x1500 6000x2000 8000x2500	

ALUPLAST 930 R/M®

SINTERED ALUMINA 92%
ADHESIVE PASTE

Adhesive paste containing 70% ALUDES 150 particles. The best alternative for non-standard forms of equipment lining or those which require repair.

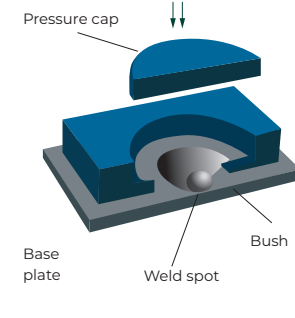
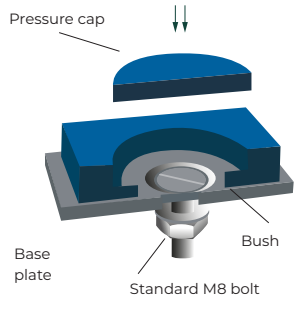
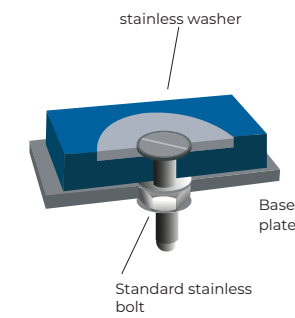
MIX			USAGE		
	+			ALUPLAST 930R	A+B 10 kg
Adhesive paste		Hardening agent	8h after application	Sufficient thickness	5 mm 1 m² aprox
				ALUPLAST 930R	A+B 250 kg
				Sufficient thickness	15 mm 1 m² aprox

PLASTDES 100®

POLÍMERO DE ALTA DENSIDAD MOLECULAR

Producto con propiedades de alta resistencia a la abrasión, impacto y excelente deslizamiento.

TECHNICAL DATA			SUPPLY OF PLATES	
Hardness	Density gr/cm³	COEFFICIENT of FRICTION	Thickness (mm)	Size (mm)
100 shore A	1,20	0,08-0,10 en seco	6,8,10,12,15,20,25	3000x1200

TYPES		SUJECIÓN SOLDADURA	SUJECIÓN TORNILLO ROSCADO	SUJECIÓN TORNILLO ROSCADO	ANTI-CLUMPING
					
Pressure cap	Pressure cap	stainless washer	AANTI-CLUMPING	NOISE REDUCTION	SELF-EXTINGUISHING
Base plate	Base plate	Standard stainless bolt	Prevents material adhesion issues	Reduces noise	Supply of flame-retardant material on request
Weld spot	Standard M8 bolt				