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<td>Titania</td>
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<td>25</td>
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<td>RocDur NS60</td>
<td>26</td>
</tr>
<tr>
<td>6. Ceramic Supra series</td>
<td>27</td>
</tr>
<tr>
<td>Alumina Supra</td>
<td>28</td>
</tr>
<tr>
<td>Ti-Elite</td>
<td>29</td>
</tr>
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<td>Ti-Tex</td>
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<tr>
<td>AZ Supra</td>
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<tr>
<td>Spinel Supra</td>
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</tr>
<tr>
<td>7. RocDur series</td>
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<tr>
<td>RocDur 29</td>
<td>36</td>
</tr>
<tr>
<td>RocDur 37</td>
<td>37</td>
</tr>
<tr>
<td>RocDur 40</td>
<td>38</td>
</tr>
<tr>
<td>RocDur 44</td>
<td>39</td>
</tr>
<tr>
<td>RocDur 62</td>
<td>40</td>
</tr>
<tr>
<td>RocDur 6728</td>
<td>41</td>
</tr>
<tr>
<td>RocDur 6740</td>
<td>42</td>
</tr>
<tr>
<td>RocDur 6750</td>
<td>43</td>
</tr>
<tr>
<td>RocDur Co6</td>
<td>44</td>
</tr>
<tr>
<td>RocDur Co12</td>
<td>45</td>
</tr>
<tr>
<td>8. Special alloys series</td>
<td>46</td>
</tr>
<tr>
<td>Corec 6</td>
<td>47</td>
</tr>
<tr>
<td>RocDur 625</td>
<td>48</td>
</tr>
</tbody>
</table>
WHAT’S A FLEXICORD?

Based on more than 90 years of experience on wire flame spraying process, Saint-Gobain Coating Solutions has developed this unique range of Flexicord material. Flexicord are manufactured by coextrusion of a paste containing the powder material (metallic, ceramic or carbide) and organic skin. Flexicord products are used in tandem with Saint-Gobain’s proprietary Master Jet® & Top Jet flame spray unit for optimal coating efficiency.
SAINT-GOBAIN
THERMAL SPRAY FLEXICORD

Coating Solutions that Have You Covered
Saint-Gobain Coating Solutions created its line of thermal spray Flexicord products to deliver excellent resistance to thermal cycling, abrasion, corrosion & dielectric exposure. Flexicord thermal spray consumables are used in tandem with Saint-Gobain’s proprietary Master Jet® & Top Jet flame spray unit for optimal coating efficiency. Flexicord products provide the ultimate easy-to-apply protective coatings that ensure reliable performance for a range of process conditions efficiently & effectively.

How Do Thermal Spray Flexicord Products Extend Surface Life?
The flame spray process extends the life of components by imparting a melted consumable coating material – in the form of a flexible cord – using a handy or automatic flame spray gun. The molten material is sprayed onto the component, generally at a temperature below 250° F (121° C), without altering the nature of the substrate.
The flame spray process is generally easier to set up. Saint-Gobain’s Master Jet®, Top Jet and Master Jet® III Auto flame spray units deliver coatings on accessible areas, while our ID Gun covers internal diameter surfaces. Compared with HVOF and plasma sprayed coatings, Saint-Gobain’s Flexicord consumables impart coatings with less internal stress, allowing thicker coatings with better thermal cycling resistance & wear protection.

The Saint-Gobain Flexicord Commitment
Saint-Gobain’s strictly controlled raw materials & close attention to quality throughout the manufacturing process ensure a uniform product with lot-to-lot consistency for guaranteed reliability & predictable performance.

Coating Solutions Tailored for Your Needs
Thermal spray Flexicord products are available in a range of metallic, ceramic and carbide formulations. Consult your Saint-Gobain technical specialist to assist in selecting the right coating for your specific needs.
BOND COAT SERIES

Some applications require a bond coat layer to improve adhesion of thermal spray coatings designed to increase the life of parts & equipment. For this reason, Saint-Gobain Coatings Solutions offers two thermal spray Flexicord materials engineered to improve bond strength between substrate & sprayed ceramic coatings. These Flexicord can also be used as mono layers since they can provide protection against corrosion & oxidation in high-temperature applications, thus providing maximum protection in demanding services.
NICRALY Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. NICRALY is a bond coat material used to improve the bond strength of the top coat such as ceramic coatings. Resistant to highly corrosive and high temperature environment.

### Applications
Bond coat suitable for all ceramic coatings such as thermal barriers on steel, stainless steel, cast iron, aluminum, superalloys. Metal casting, boiler... Can also be used as mono layer for corrosion protection at high temperature.

### Typical composition (%) - TTIP
- Ni: 67
- Cr: 22
- Al: 10
- Y: 1

### Color code
- Skin: Red

### Packaging
- Ø Flexicord: 4,75 mm +/- 0,1 mm
- Spool: Plastic - SD 300mm
- Weight: 7,8 Kg +/- 10%

### Coating features
- Porosity: 5%
- Oxidation: 20%
- Roughness Ra (as sprayed): 10 - 12 µm
- Hardness: 250 – 320 Hv300
- Density: 7,5 g/cm³
- Deposit Efficiency: 62%
- Melting point: 1400°C (2552°F)

#### Spray parameters
- **AIR**
  - Distance: 120 - 140 mm
  - Speed: 50 cm/min

#### Production performances
= 1200g of FLEXICORD = 37 min of spraying

---

**SAINT-GOBAIN COATING SOLUTIONS**

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NICHROME Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. NICHROME is a bond coat material used to improve the bond strength of the top coat such as ceramic coatings. It provides: low porosity, oxidation resistant and relatively smooth coatings. Ideal choice for our ceramic supra series. Not recommended on cast iron and Mn, Mg steel alloys – use our NiCrAlY.

Applications
Bond coat for all purpose ceramic coatings on steel. Good resistance to oxidation at high temperature up to 1000°C. We recommend to apply Ni-Chrome no more than 200 µm. A slight preheating at 120°C improves the bonding. Can also be used as monolayer.

Typical composition (%) - GTIP

<table>
<thead>
<tr>
<th>Element</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ni</td>
<td>80</td>
</tr>
<tr>
<td>Cr</td>
<td>20</td>
</tr>
</tbody>
</table>

Color code
Skin: Blue

Packaging
Ø Flexicord: 4.75 mm ±/- 0.1mm
Spool: Plastic - SD 300mm
Weight: 8 Kg ±/- 10%

Coating features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porosity</td>
<td>1 - 3%</td>
</tr>
<tr>
<td>Pore diameter</td>
<td>5 - 10 µm</td>
</tr>
<tr>
<td>Roughness Ra</td>
<td>6 - 8 µm</td>
</tr>
<tr>
<td>Hardness</td>
<td>280 Hv 300</td>
</tr>
<tr>
<td>Density</td>
<td>7.25 g/cm³</td>
</tr>
<tr>
<td>Deposit Efficiency</td>
<td>80%</td>
</tr>
<tr>
<td>Melting point</td>
<td>1400°C (2552°F)</td>
</tr>
</tbody>
</table>

Gun configuration

Spray parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure</td>
<td>60 mm</td>
</tr>
<tr>
<td>Pressure</td>
<td>70 mm</td>
</tr>
<tr>
<td>Pressure</td>
<td>1,2 BAR</td>
</tr>
<tr>
<td>Pressure</td>
<td>4,5 BARS</td>
</tr>
<tr>
<td>Distance</td>
<td>100 - 120 mm</td>
</tr>
<tr>
<td>Speed</td>
<td>100 cm/min</td>
</tr>
</tbody>
</table>

Production performances

1m = 900g of FLEXICORD = 20 min of spraying

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Carbide Series

Saint-Gobain Coating Solutions' carbide series of thermal spray Flexicord materials produce high performance tungsten carbide or chromium carbide coatings using our Master Jet® and Top Jet Flame Spray Guns. These coatings provide resistance to abrasion, erosion, fretting & sliding wear comparable to those produced by costlier HVOF methods. Compared to HVOF or plasma sprayed coatings, Saint-Gobain carbide series Flexicord products yield coatings with less internal stress which enables thicker coatings & better resistance to thermal cycling. The coatings can be used as sprayed – with Roughness Ra values from 4 – 6.5 μm – or can be finished with diamond or C-BN grinding. For maximum performance, carbide Flexicord products can be sprayed with Saint-Gobain’s Master Jet® or Master Jet® III Auto spray guns. For internal diameters, Saint-Gobain recommends their ID Gun flame spray unit.
CHROMKARB Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. CHROMKARB Flexicord provides abrasion, erosion, cavitation and fretting resistance. Good hot gas corrosion and oxidation resistance, particularly in sulfurous gases. Good properties for sliding wear. Can be used at service temperature up to 850°C (1562°F).

Applications

Applications: fuel rod mandrels and hot forming dies, hydraulic valves, tooling, machine parts, pump housing, wear and corrosion resistance for boiler tubes, WTE incinerator. Excellent against fretting and wear at high temperature (gas turbine, vibrating parts...).

Typical composition (%) - TTIP

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cr₃C₂</td>
<td>75</td>
</tr>
<tr>
<td>NiCr</td>
<td>25</td>
</tr>
</tbody>
</table>

Coating features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porosity</td>
<td>2 – 4%</td>
</tr>
<tr>
<td>Pore diameter</td>
<td>5 – 10 µm</td>
</tr>
<tr>
<td>Roughness Ra</td>
<td>5.5 – 6 µm</td>
</tr>
<tr>
<td>Hardness</td>
<td>900 HV₃₀₀</td>
</tr>
<tr>
<td>Density</td>
<td>7.1 g/cm³</td>
</tr>
<tr>
<td>Deposit Efficiency</td>
<td>67%</td>
</tr>
</tbody>
</table>

Typical microstructure of ChromKarb sprayed with our Master Jet® flame spray gun.

Gun configuration

<table>
<thead>
<tr>
<th>Part</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air cap holder</td>
<td>98170 2273 0</td>
</tr>
<tr>
<td>O-Ring</td>
<td>98170 3572 0</td>
</tr>
<tr>
<td>Gas nozzle*</td>
<td>98170 3769 0 (4.9 mm)</td>
</tr>
<tr>
<td></td>
<td>98170 3771 0 (5.1 mm)</td>
</tr>
<tr>
<td>Rear tube</td>
<td>98170 3765 0</td>
</tr>
<tr>
<td>O-Rings (left to right)</td>
<td>98170 5214 0</td>
</tr>
<tr>
<td></td>
<td>98170 5213 0</td>
</tr>
<tr>
<td></td>
<td>98170 5212 0</td>
</tr>
<tr>
<td></td>
<td>98170 5211 0</td>
</tr>
<tr>
<td></td>
<td>98170 5210 0</td>
</tr>
<tr>
<td>Gas mixer</td>
<td>98170 3761 0</td>
</tr>
</tbody>
</table>

*Use 4.9 mm in dry area – 5.1 mm in wet area

Spray parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OXY</td>
<td>4 BARS 60 mm</td>
</tr>
<tr>
<td>ACE</td>
<td>1.2 BAR 80 mm</td>
</tr>
<tr>
<td>AIR</td>
<td>4.5 BARS</td>
</tr>
<tr>
<td>DISTANCE</td>
<td>110 mm</td>
</tr>
<tr>
<td>SPEED</td>
<td>50 cm/min</td>
</tr>
</tbody>
</table>

Production performances

\[1030 \text{ g of FLEXICORD } = 28 \text{ min of spraying}\]
HARDKARB 12 Co Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. HARDKARB 12 Co Flexicord provides hard, tough and dense coating. Sliding wear resistant, erosion, fretting and abrasion resistant coatings. Low resistance to oxidation and corrosion. Used at service temperature up to 480°C (900°F).

Applications
Pump housings, machine parts, capstans, rollers, exhaust fans, dust collectors, dust pipes and elbows, rotating valves, wire drawing.

Typical composition (%) - TTIP

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>WC</td>
<td>88</td>
</tr>
<tr>
<td>Co</td>
<td>12</td>
</tr>
</tbody>
</table>

Color code
Skin Red

Packaging
Ø Flexicord 4,75 mm +/- 0,1mm
Spool Plastic - SD 300mm
Weight 12,1 Kg +/- 10%

Coating features
Porosity 1%
Pore diameter 5 - 10 µm
Roughness Ra (as sprayed) 4,5 – 6,5 µm
Hardness 1300 HV 300
Density 13,2 g/cm³
Deposit Efficiency 78%

Gun configuration

Oxy configuration

Air cap holder
98170 2273 0

O-Ring
98170 3572 0

Gas nozzle*
98170 3769 0 (4,9 mm)
98170 3771 0 (5,1 mm)

Rear tube
98170 3765 0

Gas mixer
98170 3761 0

O-Rings (left to right)
98170 5214 0
98170 5213 0
98170 5212 0
98170 5211 0
98170 5210 0

Oxy configuration

Air cap holder
98170 2273 0

O-Ring
98170 3572 0

Gas nozzle*
98170 3769 0 (4,9 mm)
98170 3771 0 (5,1 mm)

Rear tube
98170 3765 0

Gas mixer
98170 3761 0

O-Rings (left to right)
98170 5214 0
98170 5213 0
98170 5212 0
98170 5211 0
98170 5210 0

Air configuration

Air cap holder
98170 2273 0

O-Ring
98170 3572 0

Gas nozzle*
98170 3769 0 (4,9 mm)
98170 3771 0 (5,1 mm)

Rear tube
98170 3765 0

Gas mixer
98170 3761 0

O-Rings (left to right)
98170 5214 0
98170 5213 0
98170 5212 0
98170 5211 0
98170 5210 0

Air configuration

Air cap holder
98170 2273 0

O-Ring
98170 3572 0

Gas nozzle*
98170 3769 0 (4,9 mm)
98170 3771 0 (5,1 mm)

Rear tube
98170 3765 0

Gas mixer
98170 3761 0

O-Rings (left to right)
98170 5214 0
98170 5213 0
98170 5212 0
98170 5211 0
98170 5210 0

Air configuration

Air cap holder
98170 2273 0

O-Ring
98170 3572 0

Gas nozzle*
98170 3769 0 (4,9 mm)
98170 3771 0 (5,1 mm)

Rear tube
98170 3765 0

Gas mixer
98170 3761 0

O-Rings (left to right)
98170 5214 0
98170 5213 0
98170 5212 0
98170 5211 0
98170 5210 0

Air configuration

Air cap holder
98170 2273 0

O-Ring
98170 3572 0

Gas nozzle*
98170 3769 0 (4,9 mm)
98170 3771 0 (5,1 mm)

Rear tube
98170 3765 0

Gas mixer
98170 3761 0

O-Rings (left to right)
98170 5214 0
98170 5213 0
98170 5212 0
98170 5211 0
98170 5210 0

Spray parameters

OXY

ACE

AIR

DISTANCE

100 - 120 mm

SPEED

60 cm/min

Production performances

= 2110g of FLEXICORD = 45 min of spraying
HARDKARB 12 Co Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. HARDKARB 12 Co Flexicord provides hard, tough and dense coating. Sliding wear resistant, erosion, fretting and abrasion resistant coatings. Low resistance to oxidation and corrosion. Used at service temperature up to 480°C (900°F).

Applications
Pump housings, machine parts, capstans, rollers, exhaust fans, dust collectors, dust pipes and elbows, rotating valves, wire drawing.

Typical composition (%) - TTIP

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>WC</td>
<td>88</td>
</tr>
<tr>
<td>Co</td>
<td>12</td>
</tr>
</tbody>
</table>

Color code
Skin: Red

Packaging
Ø Flexicord: 4.75 mm +/- 0.1 mm
Spool: Plastic - SD 300mm
Weight: 12.1 Kg +/- 10%

Coating features
- Porosity: 1%
- Pore diameter: 5 - 10 μm
- Roughness Ra (as sprayed): 4.5 – 6.5 μm
- Hardness: 1300 HV 300
- Density: 13.2 g/cm³
- Deposit Efficiency: 78%

Gun configuration
Air cap holder: 98170 2273 0
Unscrewed: 2.5 turns
O-Ring: 98170 3572 0
Gas nozzle*: 98170 3769 0 (4.9 mm)
98170 3771 0 (5.1 mm)
Gas mixer: 98170 3761 0
Rear tube: 98170 3765 0
O-Rings (left to right): 98170 5214 0
98170 5213 0
98170 5212 0
98170 5211 0
98170 2875 0

Spray parameters
Air
Production performances
1 m
1m = 2110g of FLEXICORD = 45 min of spraying

SAINT-GOBAIN COATING SOLUTIONS
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HARDKARB 15 HC Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. HARDKARB 15 HC Flexicord provides hard, tough and dense coating. Abrasion resistant coatings for corrosive environment with hydrocarbons for applications in oil and gas market. Sliding wear resistant, erosion and fretting resistant coating. Used at service temperature up to 500°C (932°F).

Applications

- Pump housings, machine parts, capstans, rollers, exhaust fans, dust collectors, dust pipes and elbows, rotating valves, wire drawing.

Typical composition (%) - T_TIP

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>WC</td>
<td>85</td>
</tr>
<tr>
<td>Ni</td>
<td>10</td>
</tr>
<tr>
<td>2.75Cr</td>
<td>2.75Mo</td>
</tr>
<tr>
<td>1.15Fe</td>
<td>0.45Co</td>
</tr>
</tbody>
</table>

Color code

- Skin: Red

Packaging

- Ø Flexicord: 4.75 mm +/- 0.1 mm
- Spool: Plastic - SD 300 mm
- Weight: 11.9 Kg +/- 10%

Coating features

- Porosity: 3 – 6.5%
- Pore diameter: 5 - 15 µm
- Roughness Ra (as sprayed): 4.5 – 6.5 µm
- Hardness: 1000 - 1100 HV300
- Density: 13.3 g/cm³
- Deposit Efficiency: 65%

Typical microstructure of HARDKARB 15 HC sprayed with our Master Jet® flame spray gun.

Gun configuration

- Air cap holder: 98170 2273 0
- O-Ring: 98170 3572 0
- Rear tube: 98170 3765 0
- Gas nozzle*: 98170 3769 0 (4.9 mm) 98170 3771 0 (5.1 mm)
- O-Rings (set of 6): 98170 5210 0 98170 5211 0 98170 5212 0 98170 5213 0 98170 5214 0
- Gas mixer: 98170 3761 0
- O-Rings: 98170 2875 0

Spray parameters

- OXY: 4 BARS 65 mm
- ACE: 1.2 BAR 80 mm
- AIR: 5 BARS
- DISTANCE: 100 - 120 mm
- SPEED: 60 cm/min

Production performances

- 1 m = 0.1 mm
- 1 m = 2110 g of FLEXICORD = 45 min of spraying

SAINT-GOBAIN COATING SOLUTIONS

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HARDKARB CoCr Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. HARDKARB CoCr Flexicord provides hard, tough and dense coating. Abrasion resistant coatings for corrosive environment (water, clay, slurry, petrochemical), sliding wear resistant, erosion and fretting resistant coating. Used at service temperature up to 500°C (932°F).

**Applications**

Pump housings, machine parts, capstans, rollers, exhaust fans, dust collectors, dust pipes and elbows, rotating valves, wire drawing.

**Typical composition (%) - TIP**

<table>
<thead>
<tr>
<th>Material</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>WC</td>
<td>86</td>
</tr>
<tr>
<td>Co</td>
<td>10</td>
</tr>
<tr>
<td>Cr</td>
<td>4</td>
</tr>
</tbody>
</table>

**Color code**

Skin: Red

**Packaging**

- Ø Flexicord: 4.75 mm +/- 0.1 mm
- Spool: Plastic - SD 300mm
- Weight: 11.9 Kg +/- 10%

**Gun configuration**

- Air cap: 98170 2952 0
- Air cap holder: 98170 2273 0
- O-Ring: 98170 3572 0
- Rear tube: 98170 3765 0
- Gas nozzle*: 98170 3769 0 (4.9 mm) 98170 3771 0 (5.1 mm)
- Gas mixer: 98170 3761 0
- O-Rings (set as ring): 98170 3572 0 (4.9 mm) 98170 3771 0 (5.1 mm)

*Use 4.9 mm in dry area – 5.1 mm in wet area

**Spray parameters**

- **OXY**
  - Air: 4 BARS
  - Distance: 70 mm
  - Speed: 70 cm/min

- **ACE**
  - Air: 1.2 BAR
  - Distance: 80 mm
  - Speed: 70 cm/min

- **AIR**
  - Air: 5 BARS
  - Distance: 100 mm
  - Speed: 70 cm/min

**Production performances**

1 m = 2110g of FLEXICORD = 32 min of spraying

**Coating features**

- Porosity: 3 – 4%
- Pore diameter: 5 - 10 µm
- Roughness Ra: 4.5 – 6.5 µm
- Hardness: 1240 Hv 300
- Density: 13.2 g/cm³
- Deposit Efficiency: 65%

**Technical Bulletin**

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Ceramic Series

Saint-Gobain Coatings Solutions created the ceramic-based thermal spray Flexicord products to increase the life of components exposed to demanding process conditions. Ceramic Flexicord products are available in a range of coating formulations to cover a wide range of applications including resistance to mechanical wear, corrosion, thermal insulation, electrical insulation, diffusion barrier. Combined with Master Jet®, Master Jet® Auto, or ID Gun, these Flexicord of Ceramic Series represent the best user-friendly solution for best-in-class ceramic coatings.
PURE ALUMINA Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. PURE ALUMINA Flexicord provides: chemically inert coatings having a good thermal cycle resistance, good electrical insulation at high temperature, medium abrasion resistance and good corrosion resistance versus most of acids & alkalis. Stable up to 1100°C.

**Applications**

Enables free-standing coatings (up to 5mm and even more) to make crucibles or other components. Thermal and electrical insulation for inductive furnace, Electrical insulation for inductive heaters, filament heating rollers, Improvement of ceramic tiles surface performance, O and C diffusion-barrier coatings to protect metals from oxidation or carburation (Pt, Co, Steels, WC, etc…). Very good corrosion resistance, very good thermal shock resistance.

**Typical composition (%) - G**

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{Al}_2\text{O}_3$</td>
<td>99.7</td>
</tr>
<tr>
<td>Other</td>
<td>0.3% max</td>
</tr>
</tbody>
</table>

**Coating features**

- Porosity: 8 - 12%
- Pore diameter: $\sim$5 - 25 $\mu$m
- Roughness Ra (as sprayed): 8 - 12 $\mu$m
- Hardness: 700 - 770 Hv
- Density: 3.6 g/cm³
- Thermal Conductivity: $\sim$10-20 W.m⁻¹.K⁻¹
- Deposit Efficiency: 55%
- C.T.E.: 80.10⁻⁶.K⁻¹

**Packaging**

- Ø Flexicord: 4.75 mm +/- 0.1mm
- Spool: Plastic - SD 300mm
- Weight: 5.5 Kg +/- 10%

**Gun configuration**

- Air cap: 98170 2941 0
- Air cap holder: 98170 2273 0
- O-Ring: 98170 3572 0
- Rear tube: 98170 3765 0
- Gas nozzle*: 98170 2875 0
- O-Rings (left to right): 98170 5214 0, 98170 5213 0, 98170 5212 0, 98170 5211 0, 98170 5210 0
- Gas mixer: 98170 3761 0

*Use 4.9 mm in dry area – 5.1 mm in wet area

**Spray parameters**

- **AIR**: 4-4.5 BARS
- **DISTANCE**: 100-130 mm
- **SPEED**: 40-50 cm/min

**Production performances**

- = 655g of FLEXICORD = 40 min of spraying

**Color code**

- Skin: Pink

**Typical microstructure of Pure Alumina sprayed with our Master Jet® flame spray gun.**

**Technical Bulletin**

20170303
BLUE CORUNDUM Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. BLUE CORUNDUM Flexicord provides:
Good wear, abrasion resistance. Also a good corrosion resistance versus most of acids & alkalis.

Applications
Enables free-standing coatings (up to 5mm and even more) to make crucibles or other components, mixer, blender extruder body, tank coating, wear parts for ceramic industries, air turbines, dust collectors.

Typical composition (%) - G\text{Tip}

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al\text{2O}_3</td>
<td>95</td>
</tr>
<tr>
<td>Ti\text{O}_2</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
</tbody>
</table>

Coating features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porosity</td>
<td>6 - 8%</td>
</tr>
<tr>
<td>Pore diameter</td>
<td>~5 - 20 (\mu)m</td>
</tr>
<tr>
<td>Roughness Ra</td>
<td>5 - 6 (\mu)m</td>
</tr>
<tr>
<td>Hardness</td>
<td>800 Hv\text{300}</td>
</tr>
<tr>
<td>Density</td>
<td>3.5 g/cm\text{3}</td>
</tr>
<tr>
<td>Deposit Efficiency</td>
<td>60%</td>
</tr>
</tbody>
</table>

Packaging

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø Flexicord</td>
<td>4.75 mm +/- 0.1 mm</td>
</tr>
<tr>
<td>Spool</td>
<td>Plastic - SD 300mm</td>
</tr>
<tr>
<td>Weight</td>
<td>4.8 Kg +/- 10%</td>
</tr>
</tbody>
</table>

Spray parameters

- OXY: 4 bars, 65 mm
- ACE: 1.2 bars, 75 mm
- AIR: 4-4.5 bars
- DISTANCE: 120-140 mm
- SPEED: 40-45 cm/min

Production performances

- Master Cleaner required (ref.: 98110 3000 000)
- 1 m = 583 g of FLEXICORD = 35 min of spraying
BLACK CORUNDUM 15 Flexicord is designed to be sprayed with our MASTER JET™ flame spray gun. BLACK CORUNDUM 15 Flexicord provides: Black color coating Having a medium wear and oxidation resistance, able to achieve a thickness over 1mm. Good absorption and diffusion of Infra Red rays (IR) up to 400°C. Harder and higher wear resistance vs. Black Corundum 50.

Applications

High temperature applications. Slightly conductive coating. IR absorption and diffusion surface (heater, furnaces, components. High thickness rebuilding solution for Alumina-Titania ceramic coating.

Typical composition (%) - TTIP

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>85</td>
</tr>
<tr>
<td>TiO₂</td>
<td>15</td>
</tr>
</tbody>
</table>

Coating features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porosity</td>
<td>6 - 8%</td>
</tr>
<tr>
<td>Pore diameter</td>
<td>~10 - 20 µm</td>
</tr>
<tr>
<td>Roughness Ra (as sprayed)</td>
<td>7 - 9 µm</td>
</tr>
<tr>
<td>Hardness</td>
<td>750 Hv 300</td>
</tr>
<tr>
<td>Density</td>
<td>3.7 g/cm³</td>
</tr>
<tr>
<td>Deposit Efficiency</td>
<td>52%</td>
</tr>
</tbody>
</table>

Color code

Skin: Red

Packaging

Ø Flexicord: 4,75 mm +/- 0,1mm
Spool: Plastic - SD 300mm
Weight: 3,55 Kg +/- 10%

Gun configuration

Air cap holder: 98170 2273 0
O-Ring: 98170 3572 0
O-Rings: 98170 2875 0
Gas nozzle*: 98170 3769 0 (4,9 mm)
98170 3771 0 (5,1 mm)
Gas mixer: 98170 3761 0
Rear tube: 98170 3765 0
O-Rings (left to right):
98170 5214 0
98170 5213 0
98170 5212 0
98170 5211 0
98170 5210 0

Spray parameters

OXY

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 BARS</td>
<td>65 mm</td>
</tr>
</tbody>
</table>

ACE

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2 BAR</td>
<td>75 mm</td>
</tr>
</tbody>
</table>

AIR

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 BARS</td>
<td></td>
</tr>
</tbody>
</table>

DISTANCE

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>130 mm</td>
<td></td>
</tr>
</tbody>
</table>

SPEED

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 cm/min</td>
<td></td>
</tr>
</tbody>
</table>

Production performances

1m = 670g of FLEXICORD = 38 min of spraying
BLACK CORUNDUM 50 Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. BLACK CORUNDUM 50 Flexicord provides: Black color coating Having a medium wear and oxidation resistance, able to achieve a thickness over 1mm. Good absorption and diffusion of Infra Red rays (IR) up to 400°C. Easier to machine vs. Black Corundum 15.

Applications
High temperature applications. Slightly conductive coating. IR absorption and diffusion surface (heater, furnaces, components. High thickness rebuilding solution for Alumina-Titania ceramic coating.

Typical composition (%) - TTIP
<table>
<thead>
<tr>
<th>Component</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>50</td>
</tr>
<tr>
<td>TiO₂</td>
<td>50</td>
</tr>
</tbody>
</table>

Color code
Skin: Red

Packaging
Ø Flexicord: 4.75 mm +/- 0.1mm
Spool: Plastic - SD 300mm
Weight: 3.55 Kg +/- 10%

Coating features
- Porosity: 6 - 8%
- Pore diameter: ~10 - 20 µm
- Roughness Ra (as sprayed): 7 - 9 µm
- Hardness: 600 Hv
- Density: 3.7 g/cm³
- Deposit Efficiency: 52%

Gun configuration
Air cap 98170 2941 0
Air cap holder 98170 2273 0
O-Ring 98170 3572 0
Rear tube 98170 3765 0
Gas nozzle* 98170 3769 0 (4.9 mm)
Gas nozzle* 98170 3771 0 (5.1 mm)
O-Rings (as applied) 98170 5214 0
O-Rings (as applied) 98170 5213 0
O-Rings (as applied) 98170 5212 0
O-Rings (as applied) 98170 5211 0
O-Rings (as applied) 98170 5210 0
Oxygen mixer 98170 3761 0

Spray parameters
Production performances

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TITANIA Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. TITANIA Flexicord provides: black color, dense, smooth and wear resistant coatings. Not subject to static electricity build-up.

### Typical composition (%) - TTIP

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>TiO₂</td>
<td>100</td>
</tr>
</tbody>
</table>

### Color code

- Skin: Red

### Packaging

- Ø Flexicord: 4,75 mm +/- 0,1mm
- Spool: Plastic - SD 300mm
- Weight: 5,5 Kg +/- 10%

### Coating features

- Porosity: 3%
- Pore diameter: ~5 µm
- Roughness (Ra) (as sprayed): 4,5 - 8 µm
- Hardness: 750 - 900 Hv300
- Density: 4,1 g/cm³
- Deposit Efficiency: 60%

### Applications

Slightly conductive coating. Suitable for anti-static coating, IR absorption (up to 400°C) and diffusion surface (heater, furnaces, components. High thickness rebuilding solution for Alumina-Titania ceramic coating.

### Typical microstructure of Titania sprayed with our Master Jet® flame spray gun.

### Gun configuration

- Oxy: 70mm, 1,2 BAR
- Ace: 4,5 BARS
- Air: 90 - 130 mm
- Distance: 50 - 55 cm/min

### Spray parameters

- Production performances
  - 1m x 0,1mm = 704g of FLEXICORD = 29 min of spraying

### Technical Bulletin

20161118

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AZ 220 Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. AZ220 is a good compromise for medium wear resistance application under thermal cycle. The wide and uniform spray pattern makes it the ideal choice for coating manually very large surfaces. Its medium hardness makes AZ a "ductile" ceramic coating. AZ matches application up to 750°C on refractory steels. Good resistance to thermal shocks and thermal cycles. Good corrosion resistance against acids.

Applications

All applications requiring wear resistance and high toughness up to 750°C. Can be used as a bond-coat buffer layer for supra Flexicord coatings. Application up to 750°C on refractory steels.

Typical composition (%) - TTP

<table>
<thead>
<tr>
<th>Component</th>
<th>Composition (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>75</td>
</tr>
<tr>
<td>ZrO₂</td>
<td>23</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
</tbody>
</table>

Coating features

- Porosity: 6 – 8 %
- Pore diameter: 5 - 20 µm
- Roughness Ra (as sprayed): 7 - 12 µm
- Hardness: 500 - 600 Hv 300
- Density: 3.5 g/cm³
- Deposit Efficiency: 40 – 50 %
- C.T.E.: 7.5.10⁻⁶ K⁻¹

Packaging

- Ø Flexicord: 4,75 mm ±/- 0,1mm
- Spool: Plastic - SD 300mm
- Weight: 4,5 Kg ±/- 10%

**Color code**

Skin: Pink

**Production performances**

**Spray parameters**

- OXY: 4 BARS, 65 mm
- ACE: 1,2 BARS, 75 mm
- AIR: 4,5 BARS, 110 mm
- DISTANCE: 35 cm/min
- SPEED: 35 cm/min

**Master Cleaner required** (ref.: 98110 3000 000)

**Typical microstructure of AZ 220 sprayed with our Master Jet® flame spray gun.**

**AZ 220 Flexicord**

Ceramic series – ref : 98210 8047 000

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THERMAL SPRAY FLEXICORD
Technical Bulletin

BLACKSORB Ceramic series – ref: 98210 4647 000

BLACKSORB Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. BLACKSORB Flexicord provides:
- Black color
- High surface roughness which promotes absorptivity
- High solar absorptivity which promotes heat absorption
- Absorptivity stable on 25 – 900°C and low shrinkage (0.75% between 25 – 900°C).

### Applications

BlackSorb ceramic coating for solar absorbers, coating can be easily applied on site.

#### Typical composition (%) - GTIP

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cr₂O₃</td>
<td>55%</td>
</tr>
<tr>
<td>Al₂O₃</td>
<td>21%</td>
</tr>
<tr>
<td>SiO₂</td>
<td>17%</td>
</tr>
<tr>
<td>TiO₂</td>
<td>7%</td>
</tr>
</tbody>
</table>

#### Color code

- Skin: Red

#### Packaging

- Ø Flexicord: 4.75 mm ±/- 0.1mm
- Spool: Plastic - SD 300mm
- Weight: 4.7 Kg ±/- 10%

#### Coating features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porosity</td>
<td>~10%</td>
</tr>
<tr>
<td>Pore diameter</td>
<td>~5 - 20 µm</td>
</tr>
<tr>
<td>Roughness Rz</td>
<td>56 µm</td>
</tr>
<tr>
<td>Deposit Efficiency</td>
<td>60%</td>
</tr>
</tbody>
</table>

#### Gun configuration

![Gun configuration diagram]

*Use 4.9 mm in dry area – 5.1 mm in wet area

#### Spray parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OXY</td>
<td>55mm</td>
</tr>
<tr>
<td>ACE</td>
<td>1.2 BAR</td>
</tr>
<tr>
<td>AIR</td>
<td>65mm</td>
</tr>
<tr>
<td>DISTANCE</td>
<td>3.5 BARS</td>
</tr>
<tr>
<td>SPEED</td>
<td>30 cm/min</td>
</tr>
<tr>
<td>80 mm</td>
<td>0.1mm</td>
</tr>
</tbody>
</table>

#### Production performances

- 1m = 583g of FLEXICORD = 35 min of spraying

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IRON OXIDE Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. IRON OXIDE provides dark grey smooth coating, good wear resistance, good resistance to impact and scratches, compatible with steel thermal expansion, making it suitable for further forging operation.

**Applications**

Internal steel forging dies, Infra-Red (IR) absorbent surfaces, good sliding properties. Sacrificial coating in steel forming.

<table>
<thead>
<tr>
<th>Typical composition (%) - ( T^{\text{Tip}} )</th>
<th>Coating features</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{Fe}_3\text{O}_4 )</td>
<td>Porosity</td>
</tr>
<tr>
<td>( \text{SiO}_2 )</td>
<td>Pore diameter</td>
</tr>
<tr>
<td>Other</td>
<td>Roughness Ra (as sprayed)</td>
</tr>
</tbody>
</table>

**Color code**

| Skin | Black |

**Packaging**

| Ø Flexicord | 4,75 mm +/- 0,1mm |
| Spool | Plastic - SD 300mm |
| Weight | 6,7 Kg +/- 10% |

**Typical microstructure of Iron Oxide sprayed with our Master Jet® flame spray gun.**

**Gun configuration**

**Spray parameters**

| OXY | ACE |
| 4 BARS | 65mm | 1,2 BAR | 75mm |

| AIR | DISTANCE | SPEED |
| 4 BARS | 100 mm | 60 cm/min |

**Production performances**

\( = 700 \text{g of FLEXICORD} = 29 \text{ min of spraying} \)

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SPINEL Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. SPINEL has a low wettability versus Al & Zn. SPINEL has a very good stability up to high temperature (1400°C) and provides a good electrical insulation, good corrosion resistance versus most of acids & alkalis, medium abrasion resistance.

Applications

Very high temperature applications up to 1400°C. Electrically insulating coating. Good corrosion resistance. Suitable for contact with molten metals (Al, Zn). Coating on crucibles, chutes, fusion pots, molds, funnels, spoons. Feed rollers for galvanized wires manufacturing. Steel converter chimney and cover. Protective coating of high section of electric furnaces.

Typical composition (%) - GTOP

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>70</td>
</tr>
<tr>
<td>MgO</td>
<td>30</td>
</tr>
</tbody>
</table>

Coating features

- Porosity: ~20%
- Pore diameter: 10 - 50 µm
- Roughness Ra (as sprayed): 7 – 12 µm
- Hardness: 730 Hv 300
- Density: 3.2 g/cm³
- Deposit Efficiency: 65%
- Thermal conductivity: 5 – 10 W·m⁻¹·K⁻¹

Gun configuration

*Use 4.9 mm in dry area – 5.1 mm in wet area

Spray parameters

- AIR: 1.2 BARS
- DISTANCE: 110 – 120 mm
- SPEED: 35 – 45 cm/min

Production performances

1m = 430g of FLEXICORD = 40 min of spraying

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MAGNESIUM ZIRCONATE Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. MAGNESIUM ZIRCONATE is designed to provide thermal barrier properties and to reduce the wettability versus molten metals. When applied with NiCrAlY bond coat on metal substrates the coating has an excellent resistance to thermal shocks and thermal cycles. Very stable up to high temperature (1400°C).

**Applications**

Tools in contact with steel at high temperature, combustion chamber and boiler walls, furnace parts, pyrometer casings, oxygen lance body, casting spouts, spoons, feeder canals, crucibles for special metals casting. Thermal barrier coating.

**Typical composition (%) - G**

<table>
<thead>
<tr>
<th>Component</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zr₂O₃</td>
<td>77</td>
</tr>
<tr>
<td>MgO</td>
<td>23</td>
</tr>
</tbody>
</table>

**Coating features**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porosity</td>
<td>10 - 15%</td>
</tr>
<tr>
<td>Pore diameter</td>
<td>1 - 10 µm</td>
</tr>
<tr>
<td>Roughness Ra</td>
<td>&gt; 10 µm</td>
</tr>
<tr>
<td>Hardness</td>
<td>760 Hv 500</td>
</tr>
<tr>
<td>Density</td>
<td>4.3 g/cm³</td>
</tr>
<tr>
<td>Deposit Efficiency</td>
<td>65%</td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>2 - 3 W.m⁻¹.K⁻¹</td>
</tr>
<tr>
<td>C.T.E.</td>
<td>11.10⁻⁴ K⁻¹</td>
</tr>
</tbody>
</table>

**Gun configuration**

Air cap holder 98170 2273 0
O-Ring 98170 3572 0
Rear tube 98170 3765 0
Gas nozzle* 98170 3769 0 (4.9 mm)
98170 3771 0 (5.1 mm)
Gas mixer 98170 3761 0
O-Rings (not in sight) 98170 5214 0
98170 5213 0
98170 5212 0
98170 5211 0
98170 5210 0
98170 2875 0

*Use 4.9 mm in dry area – 5.1 mm in wet area

**Spray parameters**

- **AIR**: 4 BARS
- **DISTANCE**: 120 mm
- **SPEED**: 38-45 cm/min
- **OXY**: 4 BARS
- **ACE**: 60 mm (4 BARS)
- **DISTANCE**: 70 mm

**Production performances**

1m = 630g of FLEXICORD = 28 min of spraying

**Color code**

- Skin Pink

**Packaging**

- Ø Flexicord 4,75 mm ±/− 0,1mm
- Spool Plastic - SD 300mm
- Weight 5,8 Kg ±/− 10%
ROCDUR NS 60 Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. ROCDUR NS 60 Flexicord provides:

- High Roughness Ra and wear resistance for non-slip applications.

**Applications**

Re-winder & winding rollers for paper, reel drums, Traction & Driving rolls, bowed & expander rollers

**Typical composition (%) - TTIP**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumina powder</td>
<td>nc</td>
</tr>
<tr>
<td>Ni base</td>
<td>nc</td>
</tr>
</tbody>
</table>

**Color code**

- Skin: Red

**Packaging**

- Ø Flexicord: 4.75 mm +/- 0.1 mm
- Spool: Plastic - SD 300 mm
- Weight: 7 Kg +/- 10%

**Coating features**

- Porosity: nc
- Pore diameter: nc
- Roughness (as sprayed): Ra: 19 µm, Rmax: 143 µm, RP: 73 µm, Rt: 147 µm
- Density: 5.8 g/cm³
- Deposit Efficiency: 50 to 60%

**Gun configuration**

- Air cap
- Air cap holder
- O-Ring
- Rear tube
- Gas nozzle*
- O-Rings (as right)
- Gas mixer

*Use 4.9 mm in dry area – 5.1 mm in wet area

**Spray parameters**

**AIR**

- OXY: 4 BARS
- ACE: 1.2 BARS
- 50 mm
- 60 mm
- 3.5 - 4 BARS
- 100-130 mm
- 40-55 cm/min

**DISTANCE**

**SPEED**

**Production performances**

- 1 m = 950 g of FLEXICORD = 45 min of spraying

**THERMAL SPRAY FLEXICORD Technical Bulletin**

ROCDUR NS 60

Ceramic series – ref: 98217 0047 000

SAINT-GOBAIN COATING SOLUTIONS

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The information contained in this document is believed to be accurate and reliable but is presented without guarantee or warranty on the part of Saint-Gobain Ceramics and Plastics Inc. Nothing herein should be interpreted as an authorization or inducement to practice any patented invention without a license.
Ceramic Supra Series

Saint-Gobain Coatings Solutions created the Supra line of ceramic-based thermal spray Flexicord products to increase the life of components exposed to demanding process conditions. The Supra Flexicord line provides denser coatings with lower porosity, smoother finish after spraying (lower Ra) and finer microstructure than Ceramic Series Flexicord products.

Supra Flexicord products are available in a range of coating formulations for optimized resistance to mechanical wear, corrosion. These materials provide excellent diffusion characteristics as well as electrical insulation properties.

Supra Flexicord should be chosen for all applications where a denser & smoother coating is preferred: dielectric insulation, corrosion protection, diffusion barrier, abrasion and erosion resistance, sliding wear.
ALUMINA SUPRA Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. Alumina Supra is the best Flexicord for demanding applications requiring electrical insulation and high resistance to breakdown and also for corrosion protection and diffusion barrier coatings up to 1000°C, combined with good wear resistance and excellent corrosion resistance versus most of acids & alkalis applications.

### Applications

Moderate temperature applications. Electrical insulation for inductive heaters, resistive heaters, filament heating rollers, moderate and high voltage insulation. Diffusion barrier versus O and C: protective oxidation coating on metals. Coating on graphite and CFC furnacing plates. Protective coating for corrosion protection. Can be impregnated.

### Typical composition (%) - TTIP

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>99,7</td>
</tr>
<tr>
<td>Other</td>
<td>0,3% max</td>
</tr>
</tbody>
</table>

### Color code

- Skin: Pink

### Packaging

- Ø Flexicord: 4,75 mm +/- 0,1 mm
- Spool: Plastic - SD 300mm
- Weight: 4,5 Kg +/- 10%

### Coating features

- Porosity: ~5,1%
- Pore diameter: ~2 - 12 µm
- Roughness Ra (as sprayed): ~4,7 µm
- Hardness: 680 Hv 300
- Density: 3,37 g/cm³
- Thermal Conductivity: 12 W.m⁻¹.K⁻¹
- Resistivity: 10¹¹ Ω/cm at 25°C
- DC dielectric strength: 10-15 kV/mm
- Deposit Efficiency: 29%
- C.T.E.: 8.10⁻⁶ K⁻¹

### Gun configuration

*Use 4,9 mm in dry area – 5,1 mm in wet area

### Spray parameters

- **OXY**: 4 BARS
- **ACE**: 1,2 BAR
- **AIR**: 3,5-4,5 BARS
- **DISTANCE**: 80 mm
- **SPEED**: 40 cm/min

### Production performances

1 m = 1270g of FLEXICORD = 75 min of spraying
TI-ELITE Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. TI-ELITE Flexicord provides: blue color, smooth and wear, erosion and cavitation resistant coating and having a good corrosion resistance versus most of acids & alkalis. Narrow spray pattern suitable for narrow parts.

Applications
Thread guides, guide bars, feed separators, capstans, pumps bodies, pump sleeves, shaft, piston, cylinder rods. Friction surface for seals (O-Rings).

<table>
<thead>
<tr>
<th>Typical composition (%) - TiOIP</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>87</td>
</tr>
<tr>
<td>TiO₂</td>
<td>13</td>
</tr>
</tbody>
</table>

Color code
Skin Blue

Packaging
Ø Flexicord 4,75 mm +/- 0,1 mm
Spool Plastic - SD 300mm
Weight 4,3 Kg +/- 10%

Coating features
| Porosity | 3 - 4% |
| Pore diameter | ~1 - 15 µm |
| Roughness Ra (as sprayed) | 3 - 5 µm |
| Hardness | 900 Hv300 |
| Density | 3,4 g/cm³ |
| Deposit Efficiency | 42% |

Gun configuration

<table>
<thead>
<tr>
<th>Spray parameters</th>
<th>AIR</th>
<th>DISTANCE</th>
<th>SPEED</th>
</tr>
</thead>
<tbody>
<tr>
<td>OXY</td>
<td>4 BARS</td>
<td>65 mm</td>
<td>60 cm/min</td>
</tr>
<tr>
<td>ACE</td>
<td>1 BAR</td>
<td>1,2 mm</td>
<td>80 mm</td>
</tr>
<tr>
<td>AIR</td>
<td>4,5 BARS</td>
<td>4,9 mm</td>
<td></td>
</tr>
</tbody>
</table>

Production performances

0,1mm
1m

= 850g of FLEXICORD = 41 min of spraying
TI-TEX Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. TI-TEX Flexicord provides:
black color, smooth and having a good corrosion resistance versus most of acids & alkalis.
Dense and hard and it resists to wear caused by friction. Narrow spray pattern suitable for narrow parts.

### Applications
Thread guides, guide bars, feed separators, capstans, pumps bodies, pump sleeves, shaft, piston, cylinder rods, pin guide... Slightly lower hardness than Ti-Elite but less brittle. Choice coating for wear resistance in textile industry.

### Typical composition (%) - TTIP

<table>
<thead>
<tr>
<th>Material</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>60</td>
</tr>
<tr>
<td>TiO₂</td>
<td>40</td>
</tr>
</tbody>
</table>

### Color code
- Skin: Red

### Packaging
- Ø Flexicord: 4.75 mm +/- 0.1mm
- Spool: Plastic - SD 300mm
- Weight: 4.3 Kg +/- 10%

### Coating features
- Porosity: 4 - 7%
- Pore diameter: ~1 - 15 µm
- Roughness Ra: 3 - 5 µm
- Hardness: 950 Hv300
- Density: 3.6 g/cm³
- Deposit Efficiency: 47%

### Gun configuration

#### Air cap holder
- 98170 2273 0

#### Gas nozzle
- 98170 3769 0 (4.9 mm)
- 98170 3771 0 (5.1 mm)

#### Rear tube
- 98170 3765 0

#### Gas mixer
- 98170 3761 0

#### O-Rings (as sprayed)
- 98170 5214 0
- 98170 5213 0
- 98170 5212 0
- 98170 5211 0
- 98170 5210 0

*Use 4.9 mm in dry area – 5.1 mm in wet area

### Spray parameters

- **Air parameters**
  - 1.2 BAR
  - 4.5 BARS
  - 70-100 mm

- **Distance**
  - 70-100 mm

- **Speed**
  - 60-90 cm/min

### Production performances

= 750g of FLEXICORD = 36 min of spraying

### Technical Bulletin

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AZ SUPRA Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. AZ SUPRA has a very good abrasion resistance at high associated with good impact resistance. It has a medium hardness, very good toughness, good resistance to thermal shocks and thermal cycles and good corrosion resistance versus most acids & alkalis.

Applications
Rails, cylinder rods, forming tools in contact with molten glass, refractory funnel. All applications requiring wear resistance and high toughness up to 700°C.

Typical composition (%) - T²ip

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>75</td>
</tr>
<tr>
<td>ZrO₂</td>
<td>23</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
</tbody>
</table>

Color code
Skin: Pink

Packaging
Ø Flexicord: 4.75 mm +/- 0.1 mm
Spool: Plastic - SD 300 mm
Weight: 4.5 Kg +/- 10%

Coating features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porosity</td>
<td>~1.8%</td>
</tr>
<tr>
<td>Pore diameter</td>
<td>5 - 10 µm</td>
</tr>
<tr>
<td>Roughness Ra</td>
<td>~5 µm</td>
</tr>
<tr>
<td>Hardness</td>
<td>600 Hv300</td>
</tr>
<tr>
<td>Density</td>
<td>3.52 g/cm³</td>
</tr>
<tr>
<td>Deposit Efficiency</td>
<td>25%</td>
</tr>
</tbody>
</table>

Typical microstructure of AZ Supra sprayed with our Master Jet® flame spray gun.

Gun configuration

OXY
4 BARS
60 mm

ACE
1,2 BAR
70 mm

AIR
4,5 BARS

DISTANCE
80 mm

SPEED
60 cm/min

Spray parameters

Production performances

1m = 1015g of FLEXICORD = 47 min of spraying

AZ SUPRA
Ceramic Supra series – ref: 98210 8147 000

Technical Bulletin

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CHROMIA SUPRA Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. CHROMIA SUPRA Flexicord provides: dense and smooth coating having a very high wear resistance, good friction resistance, medium abrasion resistance and very good corrosion resistance versus most acids & alkalis.

### Applications
Thread guides, guide bars, feed separators, capstans, pumps bodies, pump sleeves, shaft, piston, cylinder rods, Friction surface for seals (O-Rings).

### Typical composition (%) - TTIP

<table>
<thead>
<tr>
<th>Component</th>
<th>Composition (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cr₂O₃</td>
<td>99,2</td>
</tr>
<tr>
<td>Other</td>
<td>0,8% max</td>
</tr>
</tbody>
</table>

### Coating features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porosity</td>
<td>~1%</td>
</tr>
<tr>
<td>Pore diameter</td>
<td>~5 µm</td>
</tr>
<tr>
<td>Roughness Ra (as sprayed)</td>
<td>~3,1 µm</td>
</tr>
<tr>
<td>Hardness</td>
<td>1110 Hv₃₀₀</td>
</tr>
<tr>
<td>Density</td>
<td>4,8 g/cm³</td>
</tr>
<tr>
<td>Deposit Efficiency</td>
<td>25% (up to 400µm)</td>
</tr>
<tr>
<td></td>
<td>15% (up to 1000µm)</td>
</tr>
</tbody>
</table>

### Packaging

<table>
<thead>
<tr>
<th>Flexicord Ø</th>
<th>4,75 mm +/- 0,1mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spool</td>
<td>Plastic - SD 300mm</td>
</tr>
<tr>
<td>Weight</td>
<td>5,5 Kg +/- 10%</td>
</tr>
</tbody>
</table>

### Spray parameters

**OXY**

- 4 BARS
- 60 mm

**ACE**

- 1,2 BAR
- 75 mm

**AIR**

- 3,5-4,5 BARS
- 80 mm

**DISTANCE**

- 80 mm

**SPEED**

- 50 cm/min

*Use 4,9 mm in dry area – 5,1 mm in wet area

Master Cleaner required (ref.: 98110 3000 000)

### Production performances

1 m = 1900 g of FLEXICORD = 45 min of spraying

### Technical Bulletin

20170303
SPINEL SUPRA Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. The SPINEL SUPRA has a low wettability versus Al & Zn. SPINEL has a good stability up to high temperature (1400°C) and provides a good electrical insulation, good corrosion resistance versus most of acids & alkalis, medium abrasion resistance. Smoother surface and denser than SPINEL coating.

Applications

Suitable for contact with molten metals (Al, Zn). Thermal barrier coating crucibles, chutes, fusion pots, molds, funnels, spoons. Feed rollers for galvanized wires manufacturing. Steel converter chimney and cover.

Typical composition (%) - TTIP

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>75</td>
</tr>
<tr>
<td>MgO</td>
<td>25</td>
</tr>
</tbody>
</table>

Coating features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porosity</td>
<td>2 – 4 %</td>
</tr>
<tr>
<td>Pore diameter</td>
<td>5 - 10 µm</td>
</tr>
<tr>
<td>Roughness Ra</td>
<td>~5 µm</td>
</tr>
<tr>
<td>Hardness</td>
<td>600 Hv₃₀₀</td>
</tr>
<tr>
<td>Density</td>
<td>2.84 g/cm³</td>
</tr>
<tr>
<td>Deposit Efficiency</td>
<td>27%</td>
</tr>
</tbody>
</table>

Packaging

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø Flexicord</td>
<td>4.75 mm +/- 0.1 mm</td>
</tr>
<tr>
<td>Spool</td>
<td>Plastic - SD 300 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>4.6 Kg +/- 10%</td>
</tr>
</tbody>
</table>

Gun configuration

*Use 4.9 mm in dry area – 5.1 mm in wet area

Spray parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>OXY</td>
<td>4 BARS 60 mm</td>
</tr>
<tr>
<td>ACE</td>
<td>1.2 BAR 70 mm</td>
</tr>
<tr>
<td>AIR</td>
<td>3 - 4 BARS</td>
</tr>
<tr>
<td>DISTANCE</td>
<td>80 mm</td>
</tr>
<tr>
<td>SPEED</td>
<td>45 cm/min</td>
</tr>
</tbody>
</table>

Production performances

Master Cleaner required (ref.: 98110 3000 000)

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ZIRMAG SUPRA Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. ZIRMAG SUPRA is designed to provide thermal barrier properties and to reduce the wettability versus molten metals. It has a good resistance to thermal shocks and thermal cycles. Very stable up to high temperature (1400°C). Smoother surface & denser than MAGNESIUM ZIRCONATE.

### Typical composition (%) - TTip

- ZrO₂ 78
- MgO 22

### Color code

Skin: Pink

### Packaging

- Ø Flexicord: 4,75 mm +/- 0,1mm
- Spool: Plastic - SD 300mm
- Weight: 5,9 Kg +/- 10%

### Coating features

- Porosity: 4 - 6%
- Pore diameter: 1 - 10 µm
- Roughness Ra (as sprayed): 3,5 – 4 µm
- Hardness: 650 Hv 300
- Density: 4,7 g/cm³
- Deposit Efficiency: 39%

### Typical microstructure of Zirmag Supra sprayed with our Master Jet® flame spray gun.

### Applications

Tools in contact with steel at high temperature, in various hot forming process (steel extrusion dies). Thermal barrier on exhaust manifold, etc…

### Gun configuration

- Air cap: 98170 2952 0
- Air cap holder: 98170 2273 0
- O-Ring: 98170 3572 0
- Rear tube: 98170 3765 0
- Gas nozzle*: 98170 3769 0 (4,9 mm)
- 98170 3771 0 (5,1 mm)
- O-Rings (left to right): 98170 5214 0
- 98170 5213 0
- 98170 5212 0
- 98170 5211 0
- 98170 5210 0
- Gas mixer: 98170 3761 0
- O-Rings (set as right):
  - 98170 2875 0

*Use 4,9 mm in dry area – 5,1 mm in wet area

### Spray parameters

- **AIR**: 4 BARS
- **DISTANCE**: 100 mm
- **SPEED**: 60 cm/min

**Production performances**

1m = 870g of FLEXICORD = 41 min of spraying

**Technical Bulletin**

20170313

**SAINT-GOBAIN COATING SOLUTIONS**

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Saint-Gobain Coating Solutions developed the RocDur series of thermal spray Flexicord products to deliver high-quality, cost effective coatings for flame spray applications, either as sprayed or as spray and fused. Made of self-fluxing alloy, RocDur thermal spray Flexicord products are available in a range of wear-resistant compositions with matrix hardness values from 29 HRC to 62 HRC. Whichever formula meets your specific needs for resistance to corrosion, friction, thermal shock or thermal aging, RocDur thermal spray Flexicord products enable coating with excellent protection to extend service life.

For demanding Spray & Fused work, the combination of Master Jet® and Flexicord RocDur Series provides a high performance process that enables our customers to be successful with safe fusing step even on trick geometries. Master Jet® + RocDur series gives denser and more adhesive layers prior to fusing step, making the fusing step successful every time.
ROCDUR 29 Flexicord is designed to be sprayed (with our MASTER JET® flame spray gun) and fused. ROCDUR 29 provides medium wear resistant coatings as well as a good thermal aging resistance and low cracking occurrence at post fusion. Very good resistance to thermal shocks. ROCDUR 29 can also be used as a bond coat for ROCDUR 6750/6740.

### Applications
Glassworks components (molds, press and blow plungers...), wide and/or concave surfaces, highly thermally stressed, mechanical parts rebuilding, corrosion resistant coatings, can be used as a bond coat for RocDur 6750 and RocDur 6740. Post fusion only with acetylene.

### Typical composition (%) - TTIP
- Ni 1.8B 2.7Si 0.8Fe 0.06C

### Color code
- Skin: Red

### Packaging
- Ø Flexicord: 4.75 mm +/- 0.1mm
- Spool: Plastic - SD 300mm
- Weight: 11.5 Kg +/- 10%

### Coating features
- Porosity: < 1% as fused
- Pore diameter: < 1 µm as fused
- Roughness Ra (as sprayed): 12.5 µm
- Hardness (after fusion): 210 – 275 Hv300
- Density: 8.1 g/cm³
- Deposit Efficiency: 83% to 90%
- Melting point: ~1030°C (1870°F)

### Gun configuration

### Spray parameters
- **OXY**
  - BARS: 4
  - BAR: 65
- **ACE**
  - BARS: 1.2
  - BAR: 80
- **AIR**
  - BARS: 3 - 4
- **DISTANCE**
  - 120 - 150 mm
- **SPEED**
  - 80 - 100 cm/min

### Production performances

1m = 942g of FLEXICORD = 12 min of spraying

### Technical Bulletin
20170313

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ROCDUR 37 Flexicord is designed to be sprayed (with our MASTER JET® flame spray gun) and fused. ROCDUR 37 provides medium wear resistant coatings as well as a good thermal aging resistance. ROCDUR 37 can also be used as a bond coat for ROCDUR 6750/6740. Very good resistance to thermal shocks, good corrosion resistance, low cracking occurrence risk.

Applications

Glassworks components (molds, press and blow plungers...), wide and/or concave surfaces highly thermally stressed, mechanical parts rebuilding, can be used as a bond coat for RocDur 6750 and RocDur 6740. Post fusion only with acetylene.

Typical composition (%) - TTIP

Ni  7Cr  1.2B  3.7Si  3Fe  0.32C

Color code

Skin  Red

Packaging

Ø Flexicord  4.75 mm +/- 0.1mm
Spool  Plastic - SD 300mm
Weight  11.5 Kg +/- 10%

Coating features

Porosity  < 1% as fused
Pore diameter  < 1 µm as fused
Roughness Ra (as sprayed)  12.5 µm
Hardness (after fusion)  335 – 380 Hv300
Density  8.1 g/cm³
Deposit Efficiency  83% to 90%
Melting point  ~1030°C (1870°F)

Gun configuration

Air cap holder  98170 2273 0
O-Ring  98170 3572 0
Gas mixer  98170 3761 0
Gas nozzle*  98170 3765 0  (4.9 mm)
98170 3771 0  (5.1 mm)
Rear tube  98170 3765 0
O-Rings (left to right)  98170 5214 0
98170 5213 0
98170 5212 0
98170 5211 0
98170 5210 0
98170 2875 0

Spray parameters

OXY

1.2 BAR
4 BARS
65 mm

ACE

120 - 150 mm
3 - 4 BARS
80 - 100 cm/min

AIR

DISTANCE

SPEED

Production performances

0.1mm
1m
1m = 942g of FLEXICORD = 12 min of spraying

OXY

1.2 BAR
4 BARS
65 mm

ACE

120 - 150 mm
3 - 4 BARS
80 - 100 cm/min

AIR

DISTANCE

SPEED

Production performances

0.1mm
1m
1m = 942g of FLEXICORD = 12 min of spraying
ROCDUR 40 Flexicord is designed to be sprayed (with our MASTER JET® flame spray gun) and fused. ROCDUR 40 provides medium wear resistant coatings as well as a good thermal aging resistance. ROCDUR 40 is suitable for build-up and repair of worn molds and other parts requiring wear resistant and impact resistant coating. Low cracking occurrence risk. Good corrosion resistant coating.

**Applications**

Glassworks components (molds, press and blow plungers…), wide and/or concave surfaces highly thermally stressed, mechanical parts rebuilding. Post fusion only with acetylene.

**Typical composition (%) - TIP**

<table>
<thead>
<tr>
<th>Element</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ni</td>
<td>7.5Cr</td>
</tr>
<tr>
<td>1.6B</td>
<td>3.5Si</td>
</tr>
<tr>
<td>2.5Fe</td>
<td>0.25C</td>
</tr>
</tbody>
</table>

**Coating features**

- Porosity: < 1% as fused
- Pore diameter: < 1 µm as fused
- Roughness Ra (as sprayed): 12.5 µm
- Hardness (after fusion): 425 Hv300 (40 HRC)
- Density: 8.1 g/cm³
- Deposit Efficiency: 83% to 90%
- Melting point: ~1030°C (1870°F)

**Gun configuration**

<table>
<thead>
<tr>
<th>Component</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air cap</td>
<td>98170 2952 0</td>
</tr>
<tr>
<td>Air cap holder</td>
<td>98170 2273 0</td>
</tr>
<tr>
<td>O-Ring</td>
<td>98170 3572 0</td>
</tr>
<tr>
<td>Gas nozzle*</td>
<td>98170 3765 0</td>
</tr>
<tr>
<td>Rear tube</td>
<td>98170 3761 0</td>
</tr>
<tr>
<td>O-Rings (set as right)</td>
<td>98170 5214 0, 98170 5213 0, 98170 5212 0, 98170 5211 0, 98170 5210 0</td>
</tr>
<tr>
<td>Gas mixer</td>
<td>98170 3761 0</td>
</tr>
</tbody>
</table>

*Use 4.9 mm in dry area – 5.1 mm in wet area

**Spray parameters**

**Air parameters**

- **AIR**: 3 - 4 BARS
- **DISTANCE**: 120 - 150 mm
- **SPEED**: 80 - 100 cm/min

**Production performances**

- 1 m = 942 g of FLEXICORD = 12 min of spraying

**Color code**

- Skin: Red

**Packaging**

- Ø Flexicord: 4.75 mm +/- 0.1 mm
- Spool: Plastic - SD 300 mm
- Weight: 11.4 Kg +/- 10%

**Typical microstructure of RocDur 40 sprayed with our Master Jet® flame spray gun and fused.**

**Technical Bulletin**

20170313

**FLEXICORD**

38
ROCDUR 44 Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. ROCDUR 44 provides medium wear resistant coatings as well as a good friction properties. Made of fine particles, it provides smoother & denser coatings than the other RocDur in the as-sprayed state. It produces coating quality close to plasma/HVOF coatings, easy to polish after spraying. Ideal for base coat prior to fluoropolymer top coats. Narrow spray pattern.

### Applications
Transfer chutes for glass gob, base coating for polymer (PTFE, FEP, PFA...), friction wear metal surface.

### Typical composition (%) - TIP
- Ni 7.5Cr 1.6B 3.5Si 2.5Fe 0.25C

### Color code
- Skin: Red

### Packaging
- Ø Flexicord: 4.75 mm +/- 0.1mm
- Spool: Plastic - SD 300mm
- Weight: 11.4 Kg +/- 10%

### Coating features
- Porosity: 2 – 3.5 %
- Pore diameter: 5 – 15 µm
- Roughness Ra (as sprayed): 6 µm
- Hardness: 370 HV300 (38 HRC)
- Density: 8.1 g/cm³
- Deposit Efficiency: 75% to 80%
- Melting point: ~1030°C (1870°F)

### Gun configuration
- Air cap holder: 98170 2273 0
- O-Ring: 98170 3572 0
- Rear tube: 98170 3765 0
- Gas nozzle*: 98170 3769 0 (4.9 mm)
- 98170 3771 0 (5.1 mm)
- O-Rings: 98170 5214 0
- 98170 5213 0
- 98170 5212 0
- 98170 5211 0
- 98170 5210 0
- Gas mixer: 98170 3761 0
- 98170 2875 0

*Use 4.9 mm in dry area – 5.1 mm in wet area

### Spray parameters
- AIR: 120 mm
- DISTANCE: 88 cm/min
- SPEED: 65mm 1.2 BAR
- PRODUCTION: 1045g of FLEXICORD = 15 min of spraying

### Technical Bulletin

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SAINT-GOBAIN COATING SOLUTIONS

c coatingsolutions@saint-gobain.com | www.coatingsolutions.saint-gobain.com

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ROCDUR 62 Flexicord is designed to be sprayed (with our MASTER JET® flame spray gun) and fused. ROCDUR 62 provides carbide-rich matrix, wear resistant coatings, especially for narrow neck plungers. ROCDUR 62 is very competitive versus HVOF-process. Very high hardness thanks to its carbide-rich matrix. Good corrosion resistance.

Applications
Glassworks components (narrow neck plungers), rollers requiring abrasion and wear surface with an excellent bonding and medium impact resistance, mechanical parts rebuilding. Post fusion only with acetylene.

Typical composition (%) - TTIP
Ni 14,3Cr 9,5W 2,8B 3,7Si 3,5Fe 0,6C

Color code
Skin Red

Packaging
Ø Flexicord 4,75 mm +/- 0,1mm
Spool Plastic - SD 300mm
Weight 11,4 Kg +/- 10%

Coating features
Porosity < 1% as fused
Pore diameter < 1 µm as fused
Roughness Ra (as sprayed) 12,5 µm
Hardness (after fusion) 59 – 62 HRC
Density 8,1 g/cm³
Deposit Efficiency 82%
Melting point ~1030°C (1870°F)

Applications
Glassworks components (narrow neck plungers), rollers requiring abrasion and wear surface with an excellent bonding and medium impact resistance, mechanical parts rebuilding. Post fusion only with acetylene.

Typical composition (%) - TTIP
Ni 14,3Cr 9,5W 2,8B 3,7Si 3,5Fe 0,6C

Color code
Skin Red

Packaging
Ø Flexicord 4,75 mm +/- 0,1mm
Spool Plastic - SD 300mm
Weight 11,4 Kg +/- 10%

Coating features
Porosity < 1% as fused
Pore diameter < 1 µm as fused
Roughness Ra (as sprayed) 12,5 µm
Hardness (after fusion) 59 – 62 HRC
Density 8,1 g/cm³
Deposit Efficiency 82%
Melting point ~1030°C (1870°F)

Gun configuration

Spray parameters

Production performances

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ROCDUR 6728 Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. ROCDUR 6728 can be used either as sprayed or subsequently fused. It provides highly abrasion and erosion wear resistant coatings or when fused.

Applications

Wear resistance coating for feed rollers, guides, capstans for wire drawing and drawing mills, excavator screws for abrasive materials, wear parts of mixing tools. Post fusion only with acetylene.

Typical composition (%) - TTIP

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NiCrBSi</td>
<td>72</td>
</tr>
<tr>
<td>WC</td>
<td>28</td>
</tr>
</tbody>
</table>

Coating features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porosity</td>
<td>&lt; 1% as fused</td>
</tr>
<tr>
<td>Pore diameter</td>
<td>&lt; 1 µm as fused</td>
</tr>
<tr>
<td>Roughness Ra (as sprayed)</td>
<td>8-10 µm</td>
</tr>
<tr>
<td>Hardness</td>
<td>Matrix - 60HRC WC - 1200 Hv300</td>
</tr>
<tr>
<td>Density</td>
<td>11.2 g/cm³</td>
</tr>
<tr>
<td>Deposit Efficiency</td>
<td>63% to 68%</td>
</tr>
<tr>
<td>Melting point</td>
<td>~1060°C (1940°F)</td>
</tr>
</tbody>
</table>

Typical microstructure of RocDur 6728 sprayed with our Master Jet® flame spray gun and fused.

Gun configuration

- Air cap holder 98170 2273 0
- O-Ring 98170 3572 0
- Rear tube 98170 3765 0
- Gas mixer 98170 3761 0
- O-Rings (left to right)
  - 98170 5214 0
  - 98170 5213 0
  - 98170 5212 0
  - 98170 5211 0
  - 98170 5210 0
- Gas nozzle* 98170 3769 0 (4.9 mm)
- 98170 3771 0 (5.1 mm)

Spray parameters

- OXY
  - 116 mm
  - 4 BARS
- 1.2 BAR
- ACE
  - 60 mm
- AIR
  - 70 mm
- DISTANCE
  - 3 - 4 BARS
  - 80 - 140 mm
- SPEED
  - 85 cm/min

Production performances

Production performances

1 m = 1570 g of FLEXICORD = 24 to 27 min of spraying
ROCDUR 6740 Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. ROCDUR 6740 can be used either as sprayed or subsequently fused. It provides highly abrasion and erosion wear resistant coatings or when fused.

Applications

Wear resistance coating for feed rollers, guides, capstans for wire drawing and drawing mills, excavator screws for abrasive materials, wear parts of mixing tools. Post fusion only with acetylene.

Typical composition (%) - GTIP

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NiCrBSi</td>
<td>60</td>
</tr>
<tr>
<td>WC sintered</td>
<td>40</td>
</tr>
</tbody>
</table>

Coating features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porosity</td>
<td>&lt; 1% as fused</td>
</tr>
<tr>
<td>Pore diameter</td>
<td>&lt; 1 µm as fused</td>
</tr>
<tr>
<td>Roughness Ra (as sprayed)</td>
<td>8-10 µm</td>
</tr>
<tr>
<td>Hardness</td>
<td>Matrix - 60HRC WC - 1200 Hv300</td>
</tr>
<tr>
<td>Density</td>
<td>11,2 g/cm³</td>
</tr>
<tr>
<td>Deposit Efficiency</td>
<td>63% to 68%</td>
</tr>
<tr>
<td>Melting point</td>
<td>~1060°C (1940°F)</td>
</tr>
</tbody>
</table>

Typical microstructure of RocDur 6740 sprayed with our Master Jet® flame spray gun and fused.

Packaging

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø Flexicord</td>
<td>4.75 mm +/- 0.1mm</td>
</tr>
<tr>
<td>Spool</td>
<td>Plastic - SD 300mm</td>
</tr>
<tr>
<td>Weight</td>
<td>11.1 Kg +/- 10%</td>
</tr>
</tbody>
</table>

Gun configuration

*Use 4,9 mm in dry area – 5,1 mm in wet area

Spray parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>OXY</td>
<td>60 mm</td>
</tr>
<tr>
<td>ACE</td>
<td>70 mm</td>
</tr>
<tr>
<td>AIR</td>
<td>3 - 4 BARS</td>
</tr>
<tr>
<td>DISTANCE</td>
<td>80 - 140 mm</td>
</tr>
<tr>
<td>SPEED</td>
<td>85 cm/min</td>
</tr>
</tbody>
</table>

Production performances

1m = 1780g of FLEXICORD = 25 min of spraying

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ROCDUR 6750 Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. ROCDUR 6750 can be used as sprayed and fused for Abrasion and erosion wear resistant coatings or just as sprayed for non-slip application. Its Roughness Ra is higher than ROCDUR 6740 Roughness Ra.

### Applications

- Rolling mill rollers, excavator screws for abrasive materials, friction areas for mixing tools, inner parts of incinerators (tubes, blocks...). Drilling tools. Non-Slip applications (cardboard feeders,...). Post fusion only with acetylene.

### Typical composition (%) - G\textsuperscript{TIP}

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NiCrBSi</td>
<td>50</td>
</tr>
<tr>
<td>WC cast</td>
<td>50</td>
</tr>
</tbody>
</table>

### Color code

- **Skin**: Red

### Packaging

- Ø Flexicord: 4.75 mm ± 0.1 mm
- Spool: Plastic - SD 300 mm
- Weight: 12 Kg ± 10%

### Coating features

- **Porosity**: < 1% as fused
- **Pore diameter**: < 1 µm as fused
- **Roughness Ra** (as sprayed): 10-12 µm
- **Hardness** (as fused): Matrix - 60HRC, WC - 2000 Hv300
- **Density**: 12 g/cm\(^3\)
- **Deposit Efficiency**: 65%
- **Melting point**: ~1060°C (1940°F)

### Gun configuration

- **Air cap**: 98170 2941 0
- **Air cap holder**: 98170 2273 0
- **O-Ring**: 98170 3572 0
- **Rear tube**: 98170 3765 0
- **Gas nozzle**: 98170 3769 0 (4.9 mm), 98170 3771 0 (5.1 mm)
- **Gas mixer**: 98170 3761 0
- **O-Rings** (left to right): 98170 3572 0 (10), 98170 3573 0 (10), 98170 3574 0 (10), 98170 3575 0 (10), 98170 3576 0 (10), 98170 2875 0

### Spray parameters

- **OXY**: 4 BARS, 45 mm
- **ACE**: 1.2 BAR, 50 mm
- **AIR**: 3 BARS
- **DISTANCE**: 100 mm
- **SPEED**: 40 cm/min

### Production performances

- 0.1 mm = 1670g of FLEXICORD = 43 min of spraying

### Technical Bulletin

- ROCDUR series – ref: 98210 1347 000

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ROCDUR Co6 is designed to be sprayed with our MASTER JET® flame spray gun and fuse. ROCDUR Co6 provides hardness kept up to high temperatures (turns higher than ROCDUR Co12 for temperatures above 500°C). Good tribological behavior. Good wear resistance.

Applications

Glassworks components for severe working conditions at high temperature (plungers, rings, …), friction / Wear resistant surfaces up to 600 °C. Post fusion only with acetylene.

Typical composition (%) - TIP

<table>
<thead>
<tr>
<th>Element</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co</td>
<td>13%</td>
</tr>
<tr>
<td>Ni</td>
<td>19%</td>
</tr>
<tr>
<td>Cr</td>
<td>7.3%</td>
</tr>
<tr>
<td>W</td>
<td>2.8%</td>
</tr>
<tr>
<td>Fe</td>
<td>2.6%</td>
</tr>
<tr>
<td>Si</td>
<td>1.6%</td>
</tr>
<tr>
<td>B</td>
<td>0.8%</td>
</tr>
<tr>
<td>C</td>
<td>0.8%</td>
</tr>
</tbody>
</table>

Color code

Skin | Blue

Packaging

Ø Flexicord | 4,75 mm +/- 0,1mm
Spool | Plastic - SD 300mm
Weight | 11 Kg +/- 10%

Coating features

Porosity | < 1% as fused
Pore diameter | < 1 µm as fused
Roughness Ra (as sprayed) | 12 - 15 µm
Hardness | 450 Hv300 (20°C)
          | 400 Hv300 (400°C)
          | 300 Hv300 (600°C)
Density | 8,3 g/cm³
Deposit Efficiency | 83% to 90%
Melting point | ~1120°C (2048°F)

Typical composition (%) - TTIP

<table>
<thead>
<tr>
<th>Element</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co</td>
<td>13%</td>
</tr>
<tr>
<td>Ni</td>
<td>19%</td>
</tr>
<tr>
<td>Cr</td>
<td>7%</td>
</tr>
<tr>
<td>W</td>
<td>2%</td>
</tr>
<tr>
<td>Fe</td>
<td>2%</td>
</tr>
<tr>
<td>Si</td>
<td>1%</td>
</tr>
<tr>
<td>B</td>
<td>0%</td>
</tr>
<tr>
<td>C</td>
<td>1%</td>
</tr>
</tbody>
</table>

THERMAL SPRAY
FLEXICORD

Technical Bulletin

ROCDUR Co6
RocDur series – ref : 98217 5147 000

Air cap holder 98170 2273 0
O-Ring 98170 3572 0
Gas nozzle* 98170 3769 0 (4.9 mm)
98170 3771 0 (5.1 mm)
Rear tube 98170 3765 0
Gas mixer 98170 3761 0
O-Rings (as applied) 98170 2875 0
98170 5214 0
98170 5213 0
98170 5212 0
98170 5211 0
98170 5210 0

Gun configuration

Spray parameters

OXY | ACB | AIR | DISTANCE | SPEED

100 cm/min

Production performances

= 942g of FLEXICORD = 12 min of spraying

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ROCDUR Co12
RocDur series – ref: 98217 5247 000

ROCDUR Co12 Flexicord is designed to be sprayed with our MASTER JET® flame spray gun and fuse. ROCDUR Co12 provides Hardness kept up to high temperatures. Good tribological behavior. Good wear resistance.

Applications
Glassworks components for severe working conditions at high temperature (plungers, rings, …), friction / Wear resistant surfaces up to 600 °C. Post fusion only with acetylene.

Typical composition (%) - TIP
Co 13Ni 19Cr 9W 3.2Fe 2.8Si 1.8B 1.2C

Coating features
- Porosity < 1% as fused
- Pore diameter < 1 µm as fused
- Roughness Ra (as sprayed) 12 - 15 µm
- Hardness 530 Hv300 (20°C), 440 Hv300 (400°C), 280 Hv300 (600°C)
- Density 8.35 g/cm³
- Deposit Efficiency 83% to 90%
- Melting point ~1080°C (1976°F)

Color code
Skin Blue

Packaging
Ø Flexicord 4.75 mm +/- 0.1mm
Spool Plastic - SD 300mm
Weight 11 Kg +/- 10%

Typical microstructure of RocDur Co12 sprayed with our Master Jet® flame spray gun and fused.

Gun configuration
Air cap holder 98170 2273 0
Gas nozzle* 98170 3767 0 (4.9 mm)
98170 3771 0 (5.1 mm)
Rear tube 98170 3765 0
Gas mixer 98170 3761 0
O-Rings set (as right) 98170 5214 0
98170 5213 0
98170 5212 0
98170 5211 0
98170 5210 0
98170 2875 0

*Use 4.9 mm in dry area – 5.1 mm in wet area

Spray parameters
- OXY 4 BARS 70 mm
- ACE 1.2 BAR 84 mm
- AIR 3 BARS
- DISTANCE 120 - 130 mm
- SPEED 100 cm/min

Production performances
1m = 942g of FLEXICORD = 12 min of spraying
SAINT-GOBAIN COATING SOLUTIONS

SPECIAL ALLOY SERIES
Saint-Gobain Coating Solutions offers thermal spray Flexicord products in two non-magnetic alloy formulations:

Corec 6
a cobalt-based alloy similar composition as Stellite® 6* that imparts coatings with excellent friction resistance as well as protection from corrosion & oxidation at high temperatures

RocDur 625
a nickel-based alloy of similar composition to Inconel® 625* that provides coatings with excellent corrosion & oxidation resistance that are ideal for salt-water, chemical reactors, waste-to-energy plants and highly corrosive environments.

* Stellite® is a registered Trademark from Delloro Stellite, part of Kennametal
* Inconel® is a registered Trademark from Inco
COREC 6 Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. COREC 6 is a non-magnetic and corrosion-resistant cobalt alloy achieving wear, fretting and oxidation resistant coatings. COREC 6 is suitable for friction and wear applications at moderate/high temperature (800°C).

**Applications**

Protection against friction, fretting wear at moderate/high temperature. Also usable as a bond coat suitable for all ceramic coatings on steel, stainless steel, cast iron, superalloys...

**Typical composition (%) - TTIP**

<table>
<thead>
<tr>
<th>Element</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co</td>
<td>67</td>
</tr>
<tr>
<td>Cr</td>
<td>29</td>
</tr>
<tr>
<td>W</td>
<td>4.5</td>
</tr>
<tr>
<td>C</td>
<td>1.15</td>
</tr>
</tbody>
</table>

**Color code**

- Skin: Red

**Packaging**

- Ø Flexicord: 4.75 mm +/- 0.1mm
- Spool: Plastic - SD 300mm
- Weight: 7.8 Kg +/- 10%

**Coating features**

- Porosity: 5%
- Oxidation: 20%
- Roughness Ra (as sprayed): 10 - 12 µm
- Hardness: 250 – 320 HV300
- Density: 7.5 g/cm³
- Deposit Efficiency: 62%
- Melting point: 1400°C (2552°F)

**Gun configuration**

- Air cap: 98170 2951 0
- Air cap holder: 98170 2273 0
- O-Ring: 98170 3572 0
- Rear tube: 98170 3765 0
- Gas nozzle*: 98170 4769 0 (4.9 mm) 98170 4771 0 (5.1 mm)
- Gas mixer: 98170 3761 0
- O-Rings: 98170 5214 0 98170 5213 0 98170 5212 0 98170 5211 0 98170 5210 0 98170 2875 0

*Use 4.9 mm in dry area – 5.1 mm in wet area

**Spray parameters**

- **OXY**: 4 BARS 60 mm
- **ACE**: 1.2 BAR 75 mm
- **AIR**: 4 - 4.5 BARS
- **DISTANCE**: 120 - 140 mm
- **SPEED**: 50 cm/min

**Production performances**

1 m = 0.1 mm
1 m = 1200g of FLEXICORD = 37 min of spraying
ROCDUR 625 Flexicord is designed to be sprayed with our MASTER JET® flame spray gun. ROCDUR 625 provides dense and smooth coating with low porosity. Oxidation resistant. Best corrosion--resistance coating among all Flexicord products. ROCDUR 625 withstands many corrosive environments: alkaline, sea water. Low residual oxidation after spraying. Nonmagnetic. Ideal material for temperature ranging from cryogenic to 1093°C (2000°F). Can be finished by bead blasting to reduce Roughness Ra and to seal the surface.

### Applications

Protection of boiler tubes, parts subjects to sea water corrosion, section of waste energy plants.

### Typical composition (%) - TTIP

<table>
<thead>
<tr>
<th>Material</th>
<th>Composition (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ni Cr Mo Fe alloy</td>
<td></td>
</tr>
</tbody>
</table>

### Coating features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porosity</td>
<td>2 – 5%</td>
</tr>
<tr>
<td>Pore diameter</td>
<td>5 – 10 µm</td>
</tr>
<tr>
<td>Roughness Ra</td>
<td>6 – 8 µm</td>
</tr>
<tr>
<td>Hardness</td>
<td>340 Hv</td>
</tr>
<tr>
<td>Density</td>
<td>8.44 g/cm³</td>
</tr>
<tr>
<td>Deposit Efficiency</td>
<td>80%</td>
</tr>
<tr>
<td>Melting point</td>
<td>1350°C (2460°F)</td>
</tr>
</tbody>
</table>

### Gun configuration

- Air cap holder: 98170 2273 0
- O-Ring: 98170 3572 0
- Rear tube: 98170 3765 0
- Gas nozzle*: 98170 3769 0, 98170 3771 0
- Gas mixer: 98170 3761 0
- O-Rings (as sprayed): 98170 5214 0, 98170 5213 0, 98170 5212 0, 98170 5211 0, 98170 5210 0, 98170 2875 0

*Use 4.9 mm in dry area – 5.1 mm in wet area

### Spray parameters

- **AIR**: 4.5 - 5 BARS
- **DISTANCE**: 100 - 120 mm
- **SPEED**: 100 cm/min

### Production performances

- **0.1mm**
- **1m** = 1000g of FLEXICORD = 15 min of spraying

### Color code

- Skin Red

### Packaging

- Ø Flexicord: 4.75 mm +/- 0.1mm
- Spool: Plastic - SD 300mm
- Weight: 8 Kg +/- 10%

### Technical Bulletin

ROCDUR 625 Flexicord is similar to Inconel® 625*. FLEXICORD is a registered Trademark from Inco.

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**ROCDUR 625 Flexicord**

Special alloys series – ref: 98217 6047 000

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CONVERSION CURVE
Ball Heights ➔ Flow rates

Oxygen - O2 - 20°C (30°C → -1,9%)

- 4 bars, 60 mm = 3,20 Nm3/h

Acetylene - C2H2 - 20°C (30°C → -2,2%)

- 1,2 bars, 70 mm = 1,35 Nm3/h