



### Properties

- low wettability
- low thermal conductivity giving good insulation
- good thermal shock resistance
- maintains dimensional accuracy at working temperatures
- controlled density
- low heat capacity

### Mastics & backing material

#### INSURAL 700

- good strength
- very high insulation
- for filling gaps

#### INSURAL 800

- higher strength than INSURAL 700
- used as an adhesive

#### INSURAL 7480

- mastic specifically for the lining of ladles & launders with INSURAL bricks

#### INSURAL 10

- high-insulating backing material
- 3-component powder
- water-free
- exothermic reaction

### Characteristic properties

| Properties            |                   | INSURAL 50            | INSURAL 140           | INSURAL 170           | INSURAL 180            |
|-----------------------|-------------------|-----------------------|-----------------------|-----------------------|------------------------|
| Density               | g/cm <sup>3</sup> | ~ 1.1                 | ~ 1.4                 | ~ 1.7                 | ~ 1.8                  |
| Strength              | MPa (20 °C)       | 2                     | 3                     | 5                     | 7                      |
|                       | MPa (750 °C)      | 3                     | 5                     | 6                     | 11                     |
| Expansion coefficient | K <sup>-1</sup>   | 4.5* 10 <sup>-6</sup> | 3.9* 10 <sup>-6</sup> | 0.9* 10 <sup>-6</sup> | 1.25* 10 <sup>-6</sup> |
| Open porosity         | %                 | 70                    | 42                    | 20                    | 21                     |
| Hygroscopicity        | % (20 °C, 65% RH) | 0.8                   | 0.6                   | 0.1                   | 0.1                    |
|                       | % (20 °C, 90% RH) | 2.5                   | 2.0                   | 0.6                   | 0.6                    |
| Heat conductivity     | W/mK              | 0.4 (600 °C)          | 0.47 (745 °C)         | 0.85 (745 °C)         | 0.94 (745 °C)          |
| Heat capacity         | J/kgK             | 950                   | 1001                  | 1050                  | 1100                   |

| Properties             |                   | Sealant / Adhesive |             | Adhesive     |
|------------------------|-------------------|--------------------|-------------|--------------|
|                        |                   | INSURAL 700        | INSURAL 800 | INSURAL 7480 |
| Density (wet)          | g/cm <sup>3</sup> | 1.1                | 1.1         | 1.4          |
| Density (dry)          | g/cm <sup>3</sup> | 0.6                | 0.8         | 0.9          |
| Transverse strength    | N/mm <sup>2</sup> | 1.5                | 3.0         | -            |
| Heat conductivity      | W/mK              | 0.08               | 0.1         | 0.1          |
| Shrinkage              | %                 | 0.05               | 0.05        | -            |
| Max. appl. temperature | °C                | 1100               | 1100        | 1100         |

### Formulations

#### INSURAL 50

- small shapes
- machined shapes
- high insulation
- typical applications: feeders, bushes and LPDC shapes

#### INSURAL 140

- good strength
- machinable
- good insulation
- for small and big shapes
- typical applications: ATL ladles, launders, filling cones

#### INSURAL 170

- high density
- fair insulation
- smooth surface
- not machinable
- small pieces, where high strength is needed

#### INSURAL 180

- big shapes only
- high density
- fair insulation
- difficult to machine
- typical applications: FDU baffle plates, big ATL ladles, furnace linings

### Advantages

- energy saving
- easily cleaned
- production techniques mean a wide variety of shapes can be produced
- surface strength and stability lead to clean melts and improved quality
- easily machinable to produce accurate shapes
- free from hazardous materials

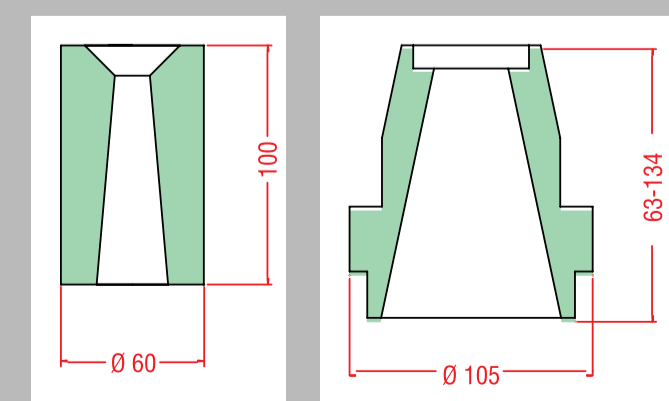
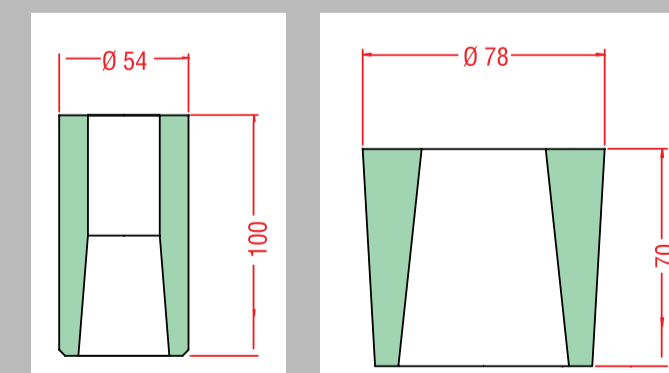
### Service



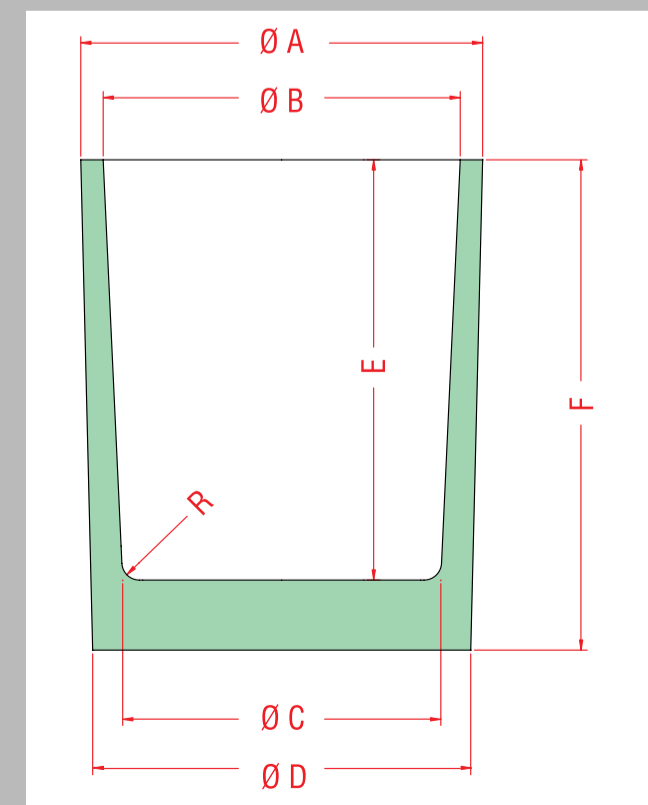
Preformed shapes are available in nearly all dimensions.

For further information and specific recommendations on the full range of Foseco INSURAL insulating refractories please refer to the local Foseco representative.

### Low Pressure Die Casting shapes

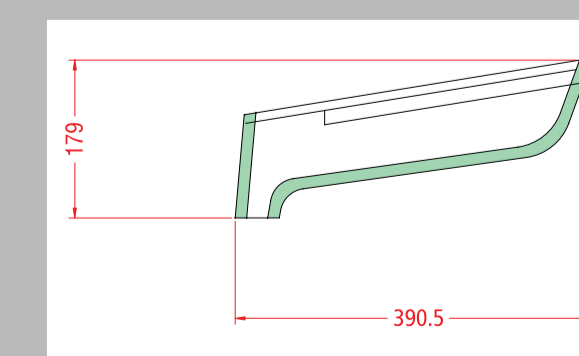
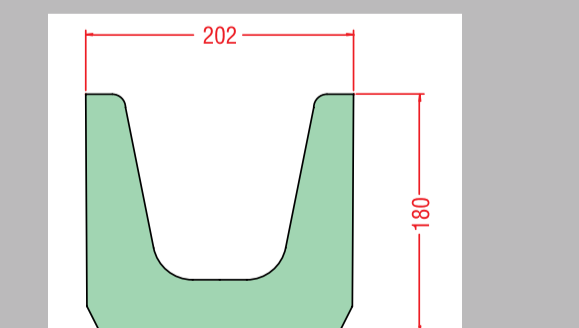


### Ladles



| Type        | No       | A    | B    | C    | D    | E    | F    | R   | Vol. (dm <sup>3</sup> ) | Kg Al 90 % filled |
|-------------|----------|------|------|------|------|------|------|-----|-------------------------|-------------------|
| ATL 15      | 1 611.2  | 250  | 210  | 150  | 185  | 245  | 265  | 0   | 5                       | 14                |
| ATL 30      | 1 547.2  | 293  | 235  | 195  | 250  | 335  | 363  | 25  | 12                      | 27                |
| ATL 40      | 1 582.2  | 300  | 250  | 210  | 250  | 418  | 450  | 40  | 17                      | 39                |
| ATL 48      | 1 552.2  | 375  | 305  | 220  | 260  | 330  | 350  | 40  | 18                      | 40                |
| ATL 65      | 1 615.2  | 400  | 365  | 255  | 285  | 350  | 390  | 0   | 26                      | 60                |
| ATL 100 SB  | 1 550.1  | 470  | 394  | 335  | 405  | 394  | 462  | 0   | 41                      | 93                |
| ATL 110 SB  | 1 616.1  | 469  | 399  | 260  | 345  | 430  | 510  | 20  | 37                      | 83                |
| ATL 140 SB  | 1 496.1  | 485  | 420  | 360  | 420  | 470  | 560  | 0   | 56                      | 126               |
| ATL 201 SB  | 1 617.1  | 545  | 480  | 445  | 515  | 440  | 530  | 0   | 73                      | 165               |
| ATL 200 SB  | 1 543.1  | 565  | 490  | 450  | 540  | 470  | 550  | 0   | 78                      | 176               |
| ATL 300 SB  | 1 490.1  | 574  | 510  | 445  | 540  | 585  | 700  | 0   | 105                     | 236               |
| ATL 400 SB  | 1 491.1  | 732  | 634  | 535  | 680  | 605  | 725  | 0   | 162                     | 365               |
| ATL 401 SB  | 1 619.1  | 680  | 580  | 485  | 630  | 730  | 850  | 0   | 163                     | 366               |
| ATL 500 SB  | 1 618.1  | 895  | 785  | 695  | 840  | 570  | 690  | 0   | 245                     | 550               |
| ATL 600 SB  | 1 492.1  | 750  | 670  | 535  | 680  | 855  | 975  | 0   | 244                     | 548               |
| ATL 800 SB  | 1 493.1  | 908  | 808  | 695  | 840  | 730  | 850  | 0   | 324                     | 729               |
| ATL 1000 SB | 1 494.1  | 920  | 830  | 695  | 840  | 880  | 1000 | 0   | 402                     | 904               |
| ATL 1300 SB | 1 873.1  | 930  | 830  | 710  | 860  | 1150 | 1275 | 0   | 535                     | 1205              |
| ATL 1400 SB | 1 1131.1 | 990  | 890  | 810  | 950  | 1010 | 1135 | 20  | 573                     | 1289              |
| ATL 1800 SB | 1 1270.1 | 1100 | 1000 | 900  | 1050 | 1200 | 1275 | 20  | 845                     | 1900              |
| ATL 2000    | 1 1026.2 | 1190 | 1077 | 1058 | 1190 | 970  | 1050 | 100 | 935                     | 2000              |
| ATL 2250    | 1 1280.2 | 1180 | 1080 | 1056 | 1180 | 1284 | 1374 | 100 | 1000                    | 2250              |

### Launders



### Dosing furnace consumables

