

# Novaref

Ceramic Rollers Pvt. Ltd.  
(A subsidiary of Novaref-Italy)

**REFRACTORY ROLLERS**

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# Company

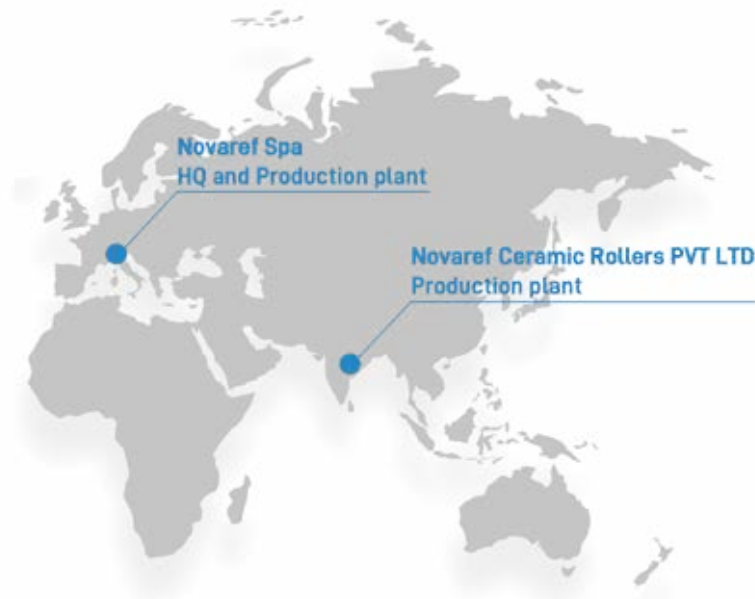
**Novaref Ceramic Rollers** is the production subsidiary established in India and controlled by **Novaref SpA**. The facility represents the first Indian ceramic roller production hub entirely based on Italian technological and industrial expertise. The plant features automated extrusion lines, a modern European-designed kiln, and a new finishing and quality control center.

The plant can produce rollers with highly variable diameters and lengths.

The Indian plant produces two types of rollers, each with distinct technical characteristics designed to meet the varying operating conditions of the kilns.

**NOVA BH-L:** To keep tiles aligned and to guarantee a good advanced of the material.

**NOVA BH-H:** High thermal shock resistance at high temperatures.



Novaref is committed to ESG sustainability issues for the benefit of its Customers.



### GREEN IDENTITY









The Novaref roller go green to support ESG sustainability



### SUSTAINABILITY

Novaref sustainable supplier for a better world


## Diagram of use of refractory rollers according to temperature zones

|                    | <br>Preheating zone<br>50° C - 1000° C   | <br>Firing zone<br>1000° C - 1250° C Tmax | <br>Fast Cooling zone<br>1000° C - 800° C |
|--------------------|---|--|--|
| Special Rollers    |    |  |   |
| Refractory Rollers |   |  |   |

## Chemical-physical properties

|  |                                  | NOVA<br>BH-L  | NOVA<br>BH-H  |
|--|----------------------------------|---|---|
| CHEMICAL ANALYSIS  | Al <sub>2</sub> O <sub>3</sub> % | 75-77<br>16-18  | 74-76<br>16.5-18.5  |
| BULK DENSITY   | Kg/dm <sup>3</sup>               | 2.63<br>2.73  | 2.72<br>2.82  |
| APPARENT POROSITY  | %                                | 18<br>21  | 16<br>19  |
| ABSORBED WATER   | %                                | 6.5<br>8  | 5.5<br>7  |
| MODULUS OF RUPTURE R.T.  | N/mm <sup>2</sup>                | >36   | >36   |
| THERMAL EXPANSION 1000° C  | %                                | 0.58<br>0.63  | 0.58<br>0.63  |
| THERMAL SHOCK RESISTANCE   |                                  | GOOD  | VERY GOOD   |
| IDENTIFICATION WITH COLOURED ENDS<br>AND MARKING OF ROLLER GRADE |                                  |  |  |

The data shown in this table are the average values obtained in the laboratory and do not constitute a guarantee as they are subject to change

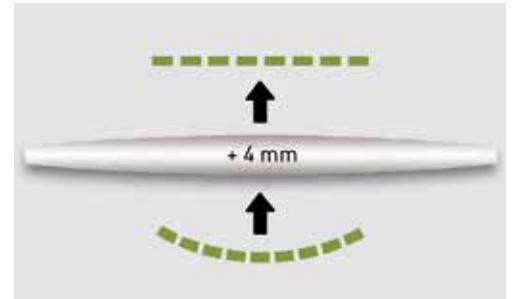
| Silicon carbide roller |   | SIC      | BULK DENSITY       | APPARENT POROSITY | ABSORBED WATER | MOD. OF RUPTURE R.T. | THERMAL EXPANSION 1000° C | THERMAL SHOCK RESISTANCE |
|------------------------|---|----------|--------------------|-------------------|----------------|----------------------|---------------------------|--------------------------|
|                        |   | %        | Kg/dm <sup>3</sup> | %                 | %              | N/mm <sup>2</sup>    | %                         |                          |
| NOVA SICAR             |  | 63<br>65 | 2.18<br>2.28       | 20<br>23          | 8.5<br>10      | > 40                 | 0.37<br>0.43              | VERY GOOD                |

NOVA SICAR has a very high thermal conductivity thanks to the high SiC content. This roller does not deform in the rapid cooling zone, allowing correct advancement of the material.

# SPECIAL ROLLERS

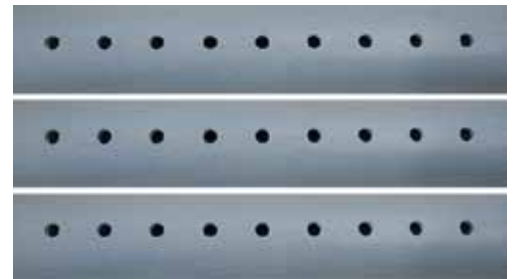
## CONVEXROLL

Correction roller used in pre-kiln / pre-heating areas (with modules of 15 pcs depending on the size), in any case before the material reaches the firing zone, in order to align the flow of the tiles and avoid contact between them or with the wall of the kiln.



## NOVA ST

Ceramic blower tube for cooling zone.  
Also available in silicon carbide.



## NOVA HELI

Roller with a shape that optimizes planarity, facilitates cooling and improves the flow of tiles inside the kiln.



## NOVA GROOVE

Roller designed for specific applications and particularly suitable for tiles with extremely reduced thickness.



## REFRACTORY PLUG

Novaref has developed a refractory plug that is inserted inside the roller to replace the conventional ceramic fiber.

The roller is supplied to the customer already buffered, thus offering a saving of time and money.

The chemical composition of the plug is like the roller, it is not dangerous for operators and the environment.