Ancon®
Refractory Fixings
for the Heat Treatment Industry

November 2020
We are one team. We are Leviat.

Leviat is the new name of CRH’s construction accessories companies worldwide.

Under the Leviat brand, we are uniting the expertise, skills and resources of Ancon and its sister companies to create a world leader in fixing, connecting and anchoring technology.

The products you know and trust will remain an integral part of Leviat’s comprehensive brand and product portfolio. As Leviat, we can offer you an extended range of specialist products and services, greater technical expertise, a larger and more agile supply chain and better, faster innovation.

By bringing together CRH’s construction accessories family as one global organisation, we are better equipped to meet the needs of our customers, and the demands of construction projects, of any scale, anywhere in the world.

This is an exciting change. Join us on our journey.

Read more about Leviat at Leviat.com
Our product brands include:

- Ancon
- Connolly
- HALFEN
- HELIFIX
- ISEDIO
- PLAKA


Leviat.com

60 locations

sales in 30+ countries

3000 people worldwide
Leviat manufactures fixings for most types of insulation material, such as fibre linings, castable linings and refractory bricks. Standard fixings are available in stainless steel grades 1.4301 (304) and 1.4845 (310), and Inconel 601. Other grades of stainless steel, mild steels and alloys are also available.

Leviat is pleased to advise on the correct selection of fixings and also provides a quick response to quotation requests.

Contents

Materials 6
Stainless Steel at Elevated Temperatures 6
Material Specification 6
Using Stainless Steel at High Temperatures 6
Refractory Anchor Systems 7
Cast-in Anchors 7
Anchors for Brick Installation 8
Bespoke Anchors 8
Mesh Anchors 8
Special Fabrications 8
Ceramic Fibre Fixing Systems 9
Using Stainless Steel at High Temperatures

The resistance to oxidation of stainless steel depends largely on the chromium content. Two other alloying elements, nickel and silicon, can also be instrumental in enhancing the oxidation resistance of the steels. Nickel in the alloy minimises oxide spalling. Silicon increases oxidation resistance by improving the compaction of the scale formed and thereby allows the steel to be used at higher operating temperatures. Corrosion in air or steam occurs relatively slowly due to the formation of a compact adherent chromium oxide based scale.

### Material Specification

Refactory fixings are available in a range of stainless steels and higher alloys:

**Grade 1.4301 (304) (18/8)**

The most widely used stainless steel grade containing typically 18% Chromium and 8% Nickel as the main alloying elements. This grade has excellent welding properties and is easily formed and fabricated.

**Grade 310**

A heat resisting steel that combines excellent resistance to both corrosion and oxidation at elevated temperatures. It is resistant to moderate thermal shock and shows high strength at high temperatures.

**Inconel Alloy 601**

Inconel 601 has an outstanding resistance to corrosion and to high temperature oxidation. The material also has good resistance to aqueous corrosion and high mechanical strength.

### Effect of Chromium Content in Steel on the Resistance to Oxidising Products of Combustion

![Effect of Chromium Content in Steel on the Resistance to Oxidising Products of Combustion](image)

### Refractory Fixings

Leviat manufactures refractory anchors and fibre fixing systems to exacting tolerances in a wide range of stainless steel and higher alloys. Standard fixings are available in stainless steel grade 1.4301 (304) and grade 1.4845 (310), and Inconel 601. Other grades of stainless steel, mild steels and alloys are available to suit requirements, including Stainless Steel grade 1.4401 (316).

**Stainless Steel at Elevated Temperatures**

Standard Stainless Steels provide corrosion resistance in a number of aggressive situations. They also provide very good oxidation and scaling resistance at elevated temperatures. In situations where standard steels reach their temperature limits, higher alloy and specially designed stainless steels provide a combination of increased strength and oxidation resistance, extending the useful working range up to higher temperatures around 1200°C.

### Typical Chemical Specification (%)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Type 304</th>
<th>Type 310</th>
<th>Inconel Alloy 601</th>
<th>Type 309</th>
<th>Type 316</th>
<th>Type 321</th>
<th>330 Alloy</th>
<th>600 Alloy</th>
<th>800H Alloy</th>
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<td>-</td>
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<tr>
<td>C</td>
<td>0.040 0.050</td>
<td>0.500</td>
<td>0.060 0.040</td>
<td>0.080 0.060 0.080</td>
<td>0.080 0.050 0.080</td>
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<td>0.50 - 2.00</td>
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<td>2.000</td>
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<td>-</td>
<td>0.450</td>
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<td>0.045</td>
<td>0.440</td>
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<tr>
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<td>0.015</td>
<td>0.030</td>
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<td>0.030</td>
<td>0.300</td>
<td>0.015</td>
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<tr>
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<td>25.00</td>
<td>21.00 - 24.00</td>
<td>22.50</td>
<td>16.80</td>
<td>17.30</td>
<td>19.000</td>
<td>14.00 - 17.00</td>
<td>19.00 - 23.00</td>
</tr>
<tr>
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<td>8.70</td>
<td>20.00</td>
<td>58.00 - 63.00</td>
<td>12.50</td>
<td>10.70</td>
<td>9.20</td>
<td>35.000</td>
<td>72.000</td>
<td>30.00 - 35.00</td>
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<td>Others</td>
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<td>-</td>
<td>Cu 0.5 Bal Fe</td>
<td>-</td>
<td>-</td>
<td>Ti less than equal to S x C</td>
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<td>Cu 0.5</td>
<td>Cu 0.75 max</td>
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<tr>
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<tr>
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<td>-</td>
<td>-</td>
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<td>0.10 - 0.60</td>
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**Notes:**

- **Inconel™** is a trademark of INCO Ltd
- **Tel:** 1300 304 320  www.ancon.com.au

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Refractory Anchor Systems
Leviat manufactures a wide range of refractory anchor fixings to suit any particular application for retaining castable and brick installations.

- Refractory Anchors
- Refractory Brick Fixings
- Special Fixings and Special Fabrications

Manufactured from round bar or plate section, the anchors are available in a number of standard shapes. They are fixed with a thread or a weld, and can be supplied with a weld foot. The fixings are available in the full range of stainless steels and alloys, and can be made to suit any depth of lining.

Cast-in Anchors
‘Y’ Anchors
These anchors are manufactured from 5-12mm diameter bar or from plate section. ‘Y’ anchors made from round bar can be supplied open to any angle, with a plain end, weld leg or thread. The tips can be fitted with plastic caps to enable expansion of the tips at temperature. ‘Y’ anchors from plate section can be supplied open to any angle, or supplied closed for installation of pre-drilled fibreboard or other initial layers prior to opening on site. Anchors can also be supplied pre-welded to a mild steel base plate for ease of installation on site.

‘V’ Anchors
Manufactured from bar diameter 5-12mm. The anchor legs can be supplied to individual requirements with odd lengths, with bends or crimps, and with plastic end caps.

Crook Anchors
Crook anchors are manufactured from 5-12mm diameter bar. The crook is available with a span of 75mm, 100mm or 125mm. Crook anchors can be supplied with a plain end, weld leg, thread or bent to fit a pre-welded cleat.
Anchors for Brick Installation

A range of refractory fixings for brick installations is available. The anchors are designed to fit refractory bricks, and can be made to customers’ specifications to suit any furnace brick. The range includes brick hooks made from bar, C-clips manufactured from plate and ‘scissor clips’.

Bespoke Anchors

Bespoke refractory anchors can be made to order, including two part anchors and fixings with multiple anchor legs. Please contact us with your requirements.

Mesh Anchors

A mesh fixing is available for retaining mesh lining. The fixing is supplied open, and is welded to the furnace lining.

Special Fabrications

Leviat has many years experience producing special fabrications to individual customer requirements. Bespoke stainless steel refractory fabrications can be designed and manufactured to operate in high temperature environments. These include brickwork support systems for chimney and furnace applications, and incineration components. Advanced manufacturing equipment and a substantial raw material stock are available to provide a consistently high level of service.
Ceramic Fibre Fixing Systems
A range of fixing systems is available for retaining ceramic fibre layers onto the furnace casing. Fixing studs can be supplied with a plain end or with a weld foot if required.

Twistlock System

Twistlock is a fixing system for ceramic fibre blankets. The standard set comprises a twistlock stud, ceramic arc shield, carbon steel speedfix washer, and a stainless steel twistlock washer. The system provides fast, simple, and secure retention of the lining. The twistlock stud is manufactured from 6.35 x 3.18mm section in lengths from 40mm with notches to retain the twistlock stainless steel washer.

Threaded Fixing System

The threaded fixing system is used for new installations and repairs to existing plant. The standard set comprises an M5 threaded stud, ceramic arc shield, carbon steel speedfix washer, stainless steel clearance washer and M5 hex nut to hold the washer in place. The studs are available in any length from 40mm, and can be supplied fully threaded, threaded one or both ends, and incorporating a weld foot.

Threaded sets are also available in non-standard sizes as M6, M8, M10, M12 and M16.
For more information on the following products, please contact:

**Masonry, Structural and Precast Concrete products:**
1300 304 320
info.ancon.au@leviat.com
Ancon.com.au

**Concrete Floor Jointing products:**
1800 335 215
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Connolly.com.au
info.isedio.au@leviat.com
Isedio.com.au

**Remedial Masonry products:**
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