



Approved Manufacturer of Steel Plates, Strip, Sections & Bars

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|---------------------|---|
| Manufacturer | SeAh Besteel Corporation |
| Address | 522, Oehang-ro, Gunsan-si, Jeollabuk-do, 54007, South Korea |
| Type | Steel Making Semi-Finished Products Bars |

This approval is subject to compliance with the Rules for the Manufacture, Testing and Certification of Materials. The full details of the processes and grades to which this approval applies are given on subsequent pages of this certificate.

This certificate is issued to the named manufacturer, and is valid until the expiry date specified. Lloyd's Register is to be notified of any change that may affect the validity of this certificate, and reserves the right to cancel or withdraw this certificate.



71 Fenchurch Street, London, EC3M 4BS, United Kingdom

Gavin Young

Emerging Manufacturing Lead Technologist
to Lloyd's Register EMEA
A member of the Lloyd's Register group

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Steel making **E.A.F./Ingot/Con Cast Grades**
 - - As below

Steel making **EAF/LRF/VD/Concast Grades**
 - - See notes

| Semi-Finished Products | Ingot (tonnes) | Grades | Maximum Weight | Units |
|-------------------------------|-----------------------|------------------|-----------------------|--------------|
| As cast | Killed | Carbon | 155.00 | Tonnes |
| As cast | Killed | Carbon-manganese | 155.00 | Tonnes |
| As cast | Killed | Alloy | 155.00 | Tonnes |

| Semi-Finished Products | Blooms | Grades | Maximum Thickness | Units |
|-------------------------------|---------------|------------------|--------------------------|--------------|
| As cast | Killed | Carbon | 510.00 | mm |
| As cast | Killed | Carbon-manganese | 510.00 | mm |
| As cast | Killed | Alloy | 510.00 | mm |

| Semi-Finished Products | Billets | Grades | Maximum Thickness | Units |
|-------------------------------|-----------------|------------------|--------------------------|--------------|
| As cast | Fine Grain Al+V | Carbon | 180.00 | mm |
| As cast | Fine Grain Al+V | Carbon-manganese | 180.00 | mm |

| Semi-Finished Products | Bars | Grades | Maximum Diameter | Units |
|-------------------------------|-------------|---------------|-------------------------|--------------|
| As Rolled | Killed | Alloy | 350.00 | mm |

| Bars | Machinery | Grades | Maximum Thickness | Units |
|-----------------------|------------------|------------------|--------------------------|--------------|
| Quenched and Tempered | Fine Grain Al | Carbon | 300.00 | mm |
| Quenched and Tempered | Fine Grain Al | Carbon-manganese | 300.00 | mm |
| Quenched and Tempered | Fine Grain Al | Alloy | 300.00 | mm |



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| Bars | Chain Cable Stock | Grades | Maximum Thickness | Units |
|-----------|--------------------|-------------|-------------------|-------|
| As Rolled | Killed | U1 | 165.00 | mm |
| As Rolled | Fine Grain Al | U2 | 165.00 | mm |
| As Rolled | Fine Grain Al+Nb+V | U3 | 165.00 | mm |
| As Rolled | Fine Grain Al | R3 | 165.00 | mm |
| As Rolled | Fine Grain Al | R3S | 190.00 | mm |
| As Rolled | Fine Grain Al | R4 | 190.00 | mm |
| As Rolled | Fine Grain Al | R4S | 146.00 | mm |
| As Rolled | Fine Grain Al+V | R5, R4S, R3 | 190.00 | mm |

Additional Remarks

EAF/LRF/VD/CC route is the approved steelmaking route for mooring grade chain cable bars.

Approved for supply of mooring grade chain cable bar stock to maximum 165mm diameter in Grades R3, R3S, R4 to DAI HAN ANCHOR CHAIN MFG CO. LTD.

Approved for supply of mooring grade chain cable bar stock to maximum 146mm diameter in Grade R4S to DAI HAN ANCHOR CHAIN MFG CO. LTD.

Approved for supply of mooring grade chain cable bar stock to maximum 140mm diameter in Grades R5 to DAI HAN ANCHOR CHAIN MFG CO. LTD.

Approved for supply of mooring grade chain cable bar stock to maximum 185mm diameter in and Grades R3, R3S and R4 to Pu Sung Metal Co., Ltd.

Approved for supply of mooring grade chain cable bar stock to maximum 190mm diameter in grades R3, R3S, R4, R4S and R5 to Vicinay Sestao S.L.U.

Semi Finished Products - Ingots, Carbon & Carbon-manganese nominal sizes 2470 / 2760mm diameter x 3100mm long, and Alloy nominal sizes 2350 / 2600mm diameter x 3050mm long, to the listed maximum weight approved for further processing for forgings.

Semi Finished Products - Blooms to nominal 390mm width x 5400mm length, to listed maximum thickness



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approved for further processing for Forgings and Rolled Products.

Semi Finished Products - Billets to nominal 180 width x 11500mm length, to listed maximum thickness approved for further processing for Rolled Products.

Alloy grade bars as semi-finished products nominal maximum length 12,000mm to the listed maximum diameter are approved for further processing for forged products.



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