TREFIMET
ENGINEERING IN THERMAL LANCES

THERMAL LANCE TREFIMET HYPERLANCE TECHNICAL SHEET

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THERMAL LANCE TREFIMET HYPERLANCE

Trefimet Hyperlance is a high performance but light weighted thermal lance which can pierce or cut by fusing any material especially those that need high thermal energy to be melted. It has been designed for those metallurgical processes with low tolerance to iron contamination and low oxygen supply; for example, silicon.

FEATURES & BENEFITS

Trefimet Hyperlance is made up with iron and aluminum, which are set in a way that the balance between iron, oxygen and aluminum liberates all the thermal energy potential that the lance has. The energy released by the iron reaction with oxygen, which is prior to that of the aluminum, increases the aluminum temperature up to its ignition point, generating a great amount of thermal energy from aluminum combustion. The most relevant feature of this lance is that it can increase useful thermal energy in at least a 25% per mass unit (useful energy/kg) above any other thermal lance, becoming the best player of the Trefimet thermal lances. Its operational benefits are:

Efficiency on Energy Generation: Despite of its low unitary mass (Kg/m) it creates a high thermal energy flux in the right direction, allowing it to cut or pierce by fusion what is required, but without burning the lance unnecessarily. Consequently, contamination by iron in the melted material should not exceed the maximum limits allowed.

Stiffness: Thanks to the Trefimet Hyperlance´s adequate moment of inertia, its sag is low, allowing the operator to attack the points he requires to break or clean without deviation, and consequently, opening the tap hole at the right height and with the required angle. Moreover, the tap hole will have smoother surface preventing material to stuck due to sedimentation and decantation which, as a result, block the drain.

Light and Easy to Operate: Trefimet Hyperlance is lightweight in relation to its diameter and energy generation, which avoids the operator to work with it making an over-effort.

Lower non-reaction oxygen insufflation: An excessive oxygen insufflation could cause, depending on the process, an increase in furnace internal pressure; molten material cooling; lower drain rate; tap hole explosions; etc.

Energy/Area ratio: Trefimet Hyperlance Energy/Area ratio, allows to make a right size perforation to pour molten material efficiently from the furnace to the ladle, lowering dramatically drain stoppages during tappings.

ESPECIFICATIONS

- Low carbon steel tubular tool with coaxial steel and aluminum inserts SAE 1010/1020.
- Quality control: Eddy current cracks and flaws detection.
- 100% free of combustible oil, grease, and hydrocarbons.
- Packaged in bundles of 50 units, with plastics caps in both tips.
- Optional Trefimet EasyClick™ coupling system that allows full lance burning.
- Patent Pending.

NOMINAL BORE	OUTSIDE Ø (mm)	LENGTH (m)	WEIGHT (Kg/m)	OXYGEN SUPPLY RECOMMENDED		OXYGEN CONSUMPTION
				GASS-TIGHT PRESSURE (bar)	Q (Nm3/h)	Q (Nm3/h)
NORMAL						
1/2"	21,3	5,7	1,25 ± 5%	4,5 - 6,0	95 - 120	70 - 95
3/4"	26,7	5,7	1,58 ± 5%	4,5 - 6,0	120 - 150	95 - 120

Note: The recommended Oxygen pressure is valid up to 6 m length, for longer lengths, please ask Trefimet's technical area.

POWERFULL