

INSUPOUR/EXOPOUR SLEEVES (Insulating/Exothermic Sleeves)

INSUPOUR & EXOPOUR is a range of exothermic and insulating sleeves. These sleeves are used to ensure proper feeding of the castings while reducing the size of the sand riser.

CRITERIA FOR SELECTION OF GRADE OF SLEEVES:

- Greater the exothermic action of sleeve, poured metal in the riser will remain liquid for longer time for perfect feeding and will also increase yield. For smaller castings, exothermic sleeves are recommended.
- Smaller the size of riser, more exothermic it should be. As the size of riser becomes larger, viz. diameter over 6", insulating properties attain importance. Hence for large risers, insulating sleeves are recommended.

AVAILABLE GRADES OF SLEEVE:

SLEEVES GRADE	M.E.F	NATURE	FEEDING EFFICIENCY	METAL
INSUPOUR 1400	1.4	Insulating	20 – 22%	CI/SG, Non-Ferrous Alloys
INSUPOUR 140	1.5	Super Insulating	25 – 27%	Steel, SG Iron, Non-Ferrous Alloys
EXOPOUR 1600	1.6	Exothermic	25 – 27%	Steel

NOTE: Feeding Efficiency: This is an approximate indicator and should be interpreted as the approximate size by which the sleeve will be smaller than an equivalent sand riser.

$$\text{MODULUS EXTENSION FACTOR (M.E.F)} = \frac{\text{Solidification time for riser with sleeve}}{\text{Solidification time for sand riser (without sleeve)}}$$

INSUPOUR 140 System is a combination of Ceramic Foam Filter & Insulating Sleeve. It is used for Cast Iron, Aluminium, Copper Base alloys & Steel.

INSUPOUR Mechanism takes place in two stages, viz. FILTRATION AND FEEDING.

1. FILTRATION:

Filtration effect is due to the mechanical entrapment of inclusions. The change in flow and pressure through the filter causes the contaminants (Inclusions) to stick to the filter labyrinth (web of pore). Our Filters have maximum open pore structure (minimum internal blockages) which result in the following benefits:

- Enhances the filtration efficiency & flow rate.
- Reduces entrapment of air bubbles into the metal downstream.
- Changes Turbulent flow to a Laminar flow.
- Reduces the oxide formation within the filter.

2. FEEDING:

Once Filtration takes place Ceramic Foam Filter floats at top & Feeding action starts. Feeding effect is due to the highly Insulating nature of the Sleeve. It improves the temperature gradients within the castings & promotes the Directional Solidification.

SALIENT FEATURES OF INSUPOUR SYSTEM:

- Gating system is completely eliminated.
- Rejection due to slag inclusion especially at machining stage is minimized.
- Soundness of Casting is improved.
- Fettle work & other rework is minimized.
- Surface finish of casting is improved.
- Machinability is improved.



SELECTION OF SLEEVE INSUPOUR SYSTEM:

SIZE OF INSUPOUR SYSTEM (Diameter)	VOLUME OF METAL IN THE SYSTEM (c.c)	EFFECTIVE MODULUS (cm)	WEIGHT RANGE OF CASTINGS TO BE POURED – Filter Capacity
30 x 100 mm	73	1.2	0-14 SG/Cu, 0-30 Grey
40 x 125 mm	192	1.6	15-18 SG/Cu, 50-55 Grey
50 x 125 mm	285	1.7	19-23 SG/Cu, 56-79 Grey
50 x 150 mm	373	1.9	24-30 SG/Cu, 80-90 Grey
60 x 150 mm	438	2.0	30-45 SG/Cu, 90-120 Grey
70 x 175 mm	829	2.6	45-55 SG/Cu, 150-170 Grey
90 x 200 mm	1686	2.8	105-115 SG/Cu, 350-370 Grey

LIST OF AVAILABLE SLEEVES

INSULATING SLEEVES			EXOTHERMIC SLEEVES		
	PRODUCT NAME	PACKAGING (BOX QTY)		PRODUCT NAME	PACKAGING (BOX QTY)
A-1	INSUPOUR 140		B-1	EXOPOUR M-1600	
i.	30 x 100 mm	126	i.	1.5 x 3 OP (40 x 80 mm)	126
ii.	40 x 125 mm	50	ii.	2 x 3 OP (50 x 80 mm)	75
iii.	50 x 125 mm	32	iii.	2.5 x 3 OP (65 x 80 mm)	60
iv.	50 x 150 mm	36	iv.	2 x 4 OP (50 x 100 mm)	75
v.	60 x 150 mm	32	v.	2.5 x 4 OP (65 x 100 mm)	60
vi.	70 x 175 mm	25	vi.	3 x 4 OP (50 x 100 mm)	36
vii.	90 x 200 mm	16	vii.	3 x 6 OP (50 x 150 mm)	32
A-2	INSULATING TAPER SLEEVES		B-2	EXOPOUR BLIND SLEEVES	
i.	50 x 125 mm T	44	i.	1.5 x 3 BL	126
ii.	50 x 95 mm T	66	ii.	2 x 3 BL	90
iii.	40 x 125 mm T	50	iii.	3 x 4 BL	48
A-3	INSULATING BLIND SLEEVES		B-3	EXOPOUR ND (Neck Down) SLEEVES	
i.	40 x 70 mm BL	126	i.	ND - 2	144
ii.	50 x 80 mm BL	90	ii.	ND - 3	48
iii.	60 x 90 mm BL	75			
iv.	70 x 100 mm BL	48			

