**IS / Doc. No. : 2097**

Title: Specification for Low expansion foam making branch pipes and portable inductors

Name of the Organization: **HD FIRE PROTECT PVT.LTD**

Clause No. with Para No. or Table No. or Figure No. commented (as applicable)	Type of comment – Technical OR Editorial	Comments/Modified Wordings	Justification for the Proposed Change
3.1.4	Addition	See below in bold letters	See below

SI no	Type	Inlet pressure kg/sqcm	
(1)	(2)	(3)	Column (4) to (7)
i)	FB 5X	7 to 7.5 **4 to 4.2**	No change
ii)	FB 10X	7 to 7.5 **4 to 4.2**	No change
iii)	FB 20X	7 to 7.5 **4 to 4.2**	No change

Justification of addition of branch pipe at 4- 4.2 kg/sqcm
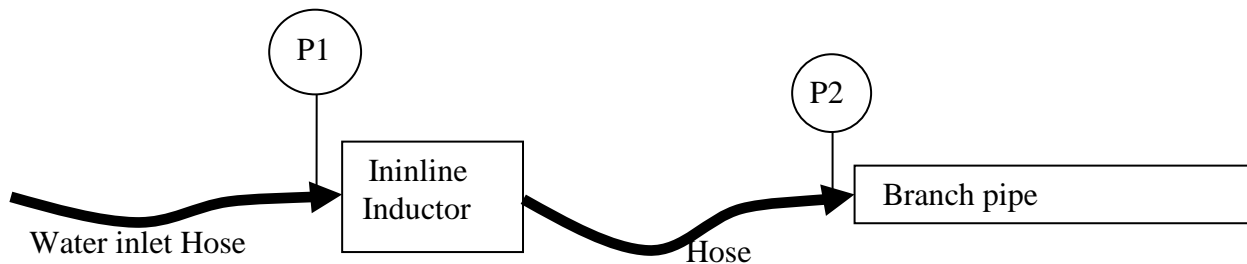
1) Branch pipe with inlet pressure of 7 kg/sqcm.

Branch pipe flow →		225 LPM	450LPM	900 LPM
		kg/sqcm ↓	kg/sqcm ↓	kg/sqcm ↓
Branch pipe inlet pressure	P2	7	7	7
Hose losses 30 meters at respective flow		0.1	0.2	0.4
Pressure required at outlet of inline inductor		7.1	7.2	7.4
Consider Inductor losses (35% of inductor water inlet pressure)		3.82	3.88	3.98
Minimum inlet pressure	P1	10.92	11.08	11.38
inductor to be designed for inlet pressure of min		11	11.5	12

Note – for branch pipe designed at 7.5 kg/sqcm inlet pressure, the inductor water inlet pressure will be higher than 12 kg/sqcm

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Generally/conventionally the hydrant system is designed to deliver 7 kg/sqcm water pressure **in case of firefighting scenario**. Therefore the above system *(branch pipe with 7 kg/sqcm inlet pressure with matching inductor)* **will not work as expected** since minimum inlet pressure required at the inlet of inductor will be less than required .

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2) Considering above, branch pipe with inductor which can function at 7 kg/sqcm water inlet pressure is **requirement of user having hydrant system designed to deliver 7 kg/sqcm. in case of firefighting scenario**.

Therefore**, branch pipe of 4-4.2 kg/sqcm with matching inductor to be added in the standard**.

Branch pipe flow →		225 LPM	450LPM	900 LPM
		kg/sqcm ↓	kg/sqcm ↓	kg/sqcm ↓
Branch pipe inlet pressure	**P2**	**4.2**	**4.2**	**4.2**
Hose losses 30 meters at respective flow		0.1	0.2	0.4
Pressure required at outlet of inline inductor		4.1	4.2	4.4
Consider Inductor losses (35% of inductor water inlet pressure)				
Minimum inlet pressure	P1	6.3	6.46	6.76
inductor to be designed for min inlet pressure		6.5	7	7