

# VENTURI CHANNEL DEBITFLO

Flow rate measurement in open channel

## DF 2500 A



Nominal flow rate  
2500 m<sup>3</sup>/h  
ISO 4359

## INSTRUCTIONS MANUAL

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in open channel  
**DEBITFLO**

08-01-2009

755 M1 018 B

**MES**

**755-18/1**

## 1. DEBITFLO LOCATION

Please consider carefully all following requirement to choose a suitable location of the open channel DEBITFLO.

### UPSTREAM SIDE SURROUNDINGS

To respect the minimum straight flow distance before the Venturi: the approach channel of the complete DEBITFLO is sufficient. However, it is better to **limit the slope of the input line at a minimal value.**

In case the slope is too high, **an undertow effect will be the consequence**, visible in the channel. In this case, the complete system will be operational only when the undertow (wave) is at a **greater distance than 30 times the highest water height of the DEBITFLO** (see the flow rate table at 100%).

**If the flow input line is not in the axis of the channel axe or through a valve, it is necessary to built up a longer approach channel.**

When the approach channel width is lower than the input line, it is necessary to built up a restriction input line in order **to avoid turbulences.**

**The best solution is to set up a basin for tranquilization** just before the approach channel, larger than the DEBITFLO and an input flow through a vertical pipeline.

### DOWNSTREAM SIDE SURROUNDINGS

The most important is to procure a free draining.

The DEBITFLO may **never get a drop pressure** back due to a bad drain off.

So, do not install a pipeline with a smaller diameter than the diameter of input line. Better to choose a really greater diameter and to design it with the highest possible slope value

**Never the height of downstream is over 80% of the upstream height.**

The most convenient when it is possible is to let **the flow output falling freely** in a cataract way.

## 2. LEVELLING THE DEBITFLO

### DIRECTION

- Install the DEBITFLO with its axis in the same axis of the flow.

### RAISING

- The bottom of the channel should be at the height of the input line bottom.

### LEVELLING

- Please use a bubble indicator to assure a perfect horizontal installation.

### 3. CARES FOR BEDDING

Before bedding the DEBITFLO in concrete, follow these recommendations to avoid any deformation inside the channel and unbalanced channel parts.

- The strengthening pieces are sufficient to keep optimal all dimensions of the channel during stocking and transport.
- These strengthening pieces are not designed to resist with the pressure due to materials (concrete, sand, foams, etc.) during bedding.
- Therefore, it is necessary to adapt bracing device, internal wood struts to balance the pressure from bedding materials and avoid restrictions/surface defects in the channel.
- Until all the materials are stabilized, dried, keep all the original strengthening pieces in place.
- Steel frameworks are of a good help for huge channels: drill into the external wood strengthening pieces to fix the channel to the structure.
- First bedding the ends of the channel and bottom of each strengthening pieces assure to keep a good position when filling is done with sand or weak concrete.

**No respect of these recommendations will cancel the manufacturer warranty.**

### UPSTREAM FINISHING

Coupling of DEBITFLO and input channel should be done of concrete, avoiding sudden changes of dimensions.

### DOWNSTREAM FINISHING

Coupling of DEBITFLO and output line should be done of concrete, keeping a freely falling.

### 4. FLOW RATE TABLE

HEIGHT %	HEIGHT mm	FLOW RATE l/s	FLOW RATE m <sup>3</sup> h
5,0	31	6,7	34,1
10,0	62	20,2	72,9
15,0	93	38,2	137,5
20,0	124	59,7	214,9
25,0	155	84,2	303,0
30,0	186	111,3	400,8
35,0	217	141,0	507,5
40,0	248	172,8	622,2
45,0	279	206,7	744,1
50,0	310	242,7	873,6
55,0	341	280,5	1009,9
60,0	372	320,0	1152,2
65,0	403	361,5	1301,2
70,0	434	404,3	1455,5
75,0	465	448,8	1615,5
80,0	496	494,7	1781,0
85,0	527	542,4	1952,8
90,0	558	591,3	2128,8
95,0	589	641,6	2309,7
100,0	621	694,9	2501,6

### 5. DIMENSIONS

*The drawing is on the next page.*

Throat width	b =	750.0 mm
Channel width	B =	1100.0 mm
Venturi length	L =	1242.0 mm
Raised bottom	P =	20.0 mm
Roughness	Ks =	0.06 mm
Maximal height	=	620,7 mm
Nominal temperature	=	20.0 °C

