


UNDERGROUND FIRE HYDRANT type PH1

<Two in one = hydrant + isolating pre-valve>
 <Dual reliability = possibility of use (closing from below)
 even when the regular closing (from above) is malfunctioning>
 <high flow rate ($K_v = 110 \text{ m}^3/\text{h}$) = less fire damage>



PROCUREMENT DATA: *1

- * Name: Underground fire hydrant
- * Made in accordance with the standard EN14339*2 
- * Nominal sizes (DN80; DN100), PN16.
- * Closing with the main valve "from above".
- * With isolation "pre-valve", closing "from below".
- * Possibility of use even when the main valve seal is defective.
- * Flow; $K_v = \min. 105 \text{ m}^3/\text{h}$.
- * Activation moment: MOT: <40Nm.
- * Repair of the main valve; the other hydrants remain in operation, without digging up the ground and without dismantling the hydrant.
- * Drainage system "all outside"; repair without dismantling the hydrant.

- * Inlet connection :
 - Flange EN1092-2 (Du80, PN16) (Du100, PN16)
 - Particular request, "describe"

- * Nominal height H_i :
 - (700) (850) (1000) mm
 - Particular request, "specify"

- * Outlet D_i :
 - 65 mm

- * Outlet couplings:
 - Specify label and standard

- * Drainage system:
 - (D1) (D2)
 - Without

- * Medium: Water
 - Drinking
 - Technical

- * Colors of external surfaces:
 - Black
 - Particular request

- * **Warranty period: 5 years.**

- * Submit documents:
 - "Brochure",
 - "Test report", issued by the hydrant "authorized body"
 - "Certificate of Conformity" hydrant, issued by an "authorized body",

- *1 \rightarrow If necessary, "omit/add"
- *2 \rightarrow **The standard determines the min. performance = "the least good allowed" hydrant.**

Appearance:

1. Inlet flange
2. Isolation "pre-valve" (closing from below)
3. Obturator "main valve" (closing from above)
- 3.1 The threaded part of the obturator
4. Body
5. Adapter
6. Outlet couplings
7. Identification plate ("CE", " K_v ", ...)
8. Drainage system:

type D1:

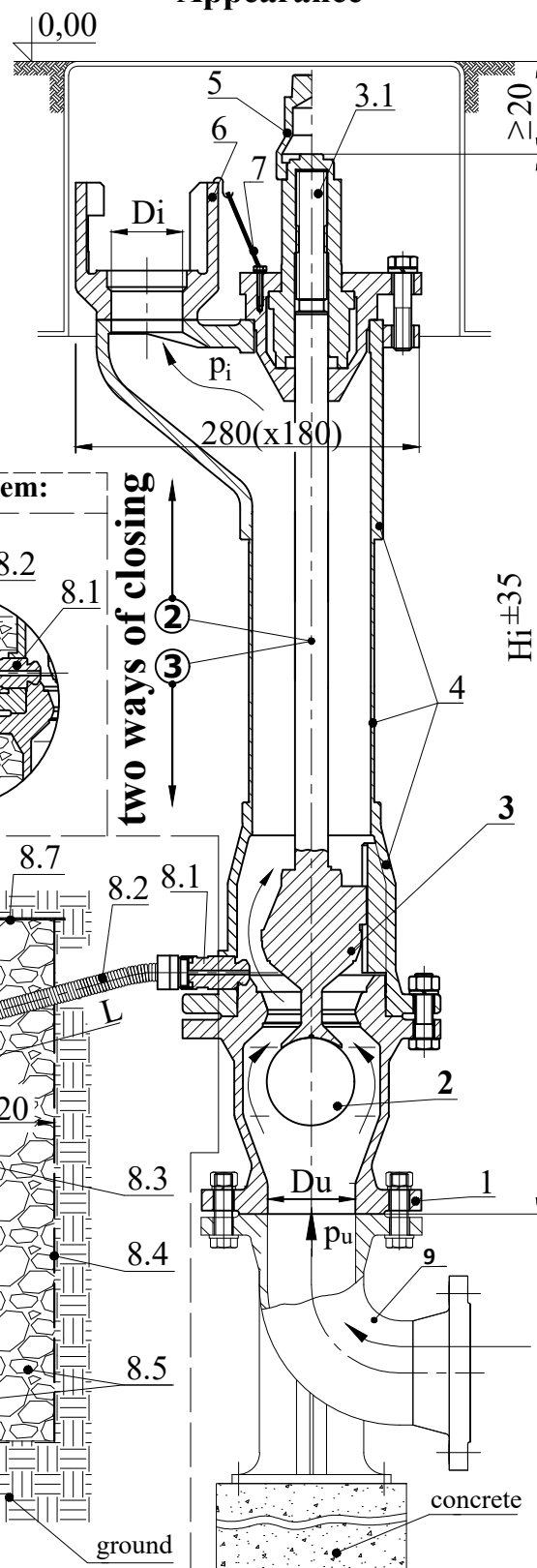
- 8.1 Drainage valve
- 8.2 Drain pipe
- 8.3 Stone $\rightarrow (16 \div 31) \text{ mm}^{*3}$

type D2:

- 8.1 Drainage valve
- 8.2 Drain pipe $\rightarrow (L=?) \text{ mm}$
- 8.3 Distribution pipe
- 8.4 Wire basket*3
- 8.5 Stones $\rightarrow (16 \div 31) \text{ mm}^{*3}$
- 8.6 Cover
- 8.7 Plastic foil*3
- 9. Arch with foot EN545*3

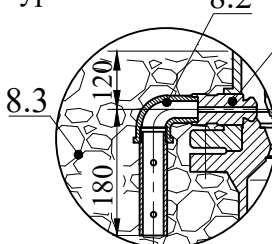
- *3 \rightarrow Provided by the buyer

Appearance



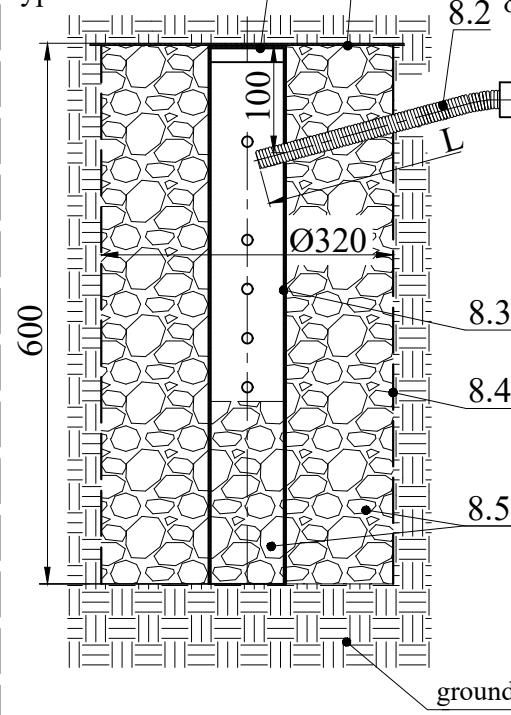
Drainage system:

type D1



two ways of closing


type D2



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Basic technical characteristics:

- * **Safe** = compliant with the requirements of the EN 14339 standard = **CE**
- * **Purpose:** Taking water from underground pipelines for fire fighting and communal needs
- * See "Procurement data" P1/2
- * **Flow:** $K_v = 110 \text{ m}^3/\text{h}$ 
- * **Moment of activation MOT:** max. 30 Nm (Class 1)
- * **Weight:** ~ (42÷48) daN for Hi (700÷1000) mm
- * **Materials:**
 - hydrant body castings nodular cast
 - sealants polypropylene/elastomers
 - pipe of body, spindle, and obturator seat stainless steel

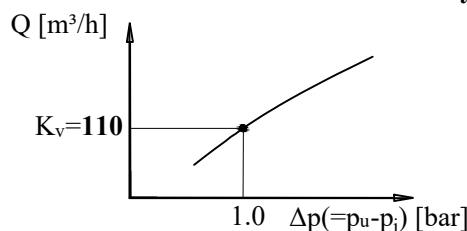
Advantages:

- * **Two ways of use = double reliability:**
 - closing with the **main valve (3)**, from above (**regular work**),
 - closing with a **pre-valve (2)**, from below (**extraordinary work**),
- * **Isolation pre-valve (2) inside the hydrant**, automatic, self-blocking, which enables:
 - to omit a separate isolation valve in front of the hydrant,
 - that the other hydrants remain in operation even when the main valve (3) malfunction,
 - use of the hydrant and when the main valve (3) is malfunction,
 - lower cost of procurement and maintenance of the hydrant network,
- * **Large flow:** ($K_v = 110 \text{ m}^3/\text{h}$), less fire damage.
- * **Control valve (7)** = great safety of the executor, prevention of hydrant freezing.
- * **Easy activation:** (class 1, MOT < 30 Nm) longer service life.
- * **High reliability of closing:** impermeability even after 1000 closings.
- * **The main valve seal is conical, self-flushing** = dirt retention prevented = longer service life.
- * **Very easy hydrant maintenance:**
 - Replacing the main valve seal (3); without digging up the ground and without dismantling the body (4).
 - The threaded part of the closure (3.1) is outside the flow of water, permanently lubricated, maintenance-free throughout its working life.
 - Repair of the drainage valve (8.1); from the outside, without dismantling the hydrant.
- * **Long warranty period 5 years.**
- * **Probably the best, and the most economical hydrant available.**

Documents accompanying the delivery of hydrant:

- * Declaration of Performance,
or Certificate of Constancy of Performance
- * Instruction for safety work (installation,
handling, inspection, maintenance, warranty)

Flow of hydrant:



$$Q = K_v \times (1000 \Delta p / \rho)^{1/2}$$

- flow..... $Q \text{ [m}^3/\text{h]}$
- flow coefficient..... $K_v \text{ [m}^3/\text{h]}$
- pressure difference..... $\Delta p \text{ [bar]}$
- water density..... $\rho \text{ [kg/m}^3]$