



D02: BUDGET

01. COSTS OF CONSTRUCTION VARIATION

02. COSTS OF EQUIPPED UTENSILS

03. INDIRECT COSTS

04. TOTAL COST

01. COSTS OF CONSTRUCTION VARIATIONS

01.01 CIVIL WORK

The work that meets all this cost are both of the independent lobbies that we find on the first floor.

01.01.01. TWO-SIDED CLOSED WALL

Two-sided closed wall 20 cm thick perforated block of cement mortar, 400x200x200 mm, rough, special color with water-repellent components, category I according to the UNE-EN 771-3 standard, placed with cement mortar 1: 8 Portland cement with calcareous filler.

METERS SQUARED NEEDED = 15,62 m².

01.01.02. METAL FIRE DOOR

Metal fire door, EI2-C 60, a hinged blade, for a light of 80x205 cm, top price, placed.

TOTAL UNITS = 2,00 UNITS.

01.01.03. CONTINUOUS FLAT ROOF

Continuous flat roof with an R-120 fire resistance formed by 10 mm thick calcium silicate plates, with a thermal conductivity of 0.175 W / (m·K) and a density of 870 kg/m³.

METERS SQUARED NEEDED = 3,59 m².

All the economic calculation that is needed for the civil work is seen in the table below:

DESCRIPTION	UNITS	UNIT COST	TOTAL COST
TWO-SIDED CLOSED WALL	15,62	35,00 (m ²)	546,70
METAL FIRE DOOR	2,00	450,00	900,00
CONTINUOUS FLAT ROOF	3,59	120,00 (m ²)	430,80
TOTAL			1877,50

The total cost of executing all the work in the establishment is **1877,50€**.

02. COSTS OF EQUIPPED UTENSILS

Before attempting to calculate the economic cost of all the utensils that must be placed in the establishment in order to comply with fire regulations, it is necessary to introduce what these instruments will be.

02.01. EMERGENCY LIGHTING

02.01.01. AC CLASS DIFFERENTIAL SWITCH

AC Class Differential Switch, Tertiary Range, 40 A Rated Current, Tetrapolar (4P), 0.03 A Sensitivity, Instant Fixed Disconnect, with Built-in Test Button and Mechanical Defect Indicator, Built to Specifications of the standard UNE-EN 61008-1, of 4 modules DIN of 18 mm of width, mounted in DIN profile.

PB = 1,00 UNITS.

TOTAL UNITS = 1,00 UNITS.

02.01.02. MAGNETOTHERMAL AUTOMATIC SWITCH

10 A rated magnetothermal circuit breaker, ICP-M type, bipolar (2P), 4500 A cutting power according to UNE 20317, 2 DIN modules 18mm wide, mounted on DIN profile.

PB = 1,00 UNITS.

TOTAL UNITS = 1,00 UNITS.

02.01.03. NON-PERMANENT AND NON-WATERTIGHT LIGHT.

Non-permanent and non-watertight emergency light, with IP4X degree of protection, circular in shape with diffuser and polycarbonate body, with 16W fluorescent lamp, approximate flux of 240 to 270 lumens, 2 hours of autonomy, high price, placed embedded.

PB = 22,00 UNITS.

PA = 8,00 UNITS.

P1 = 17,00 UNITS.

TOTAL UNITS = 47,00 UNITS.

02.01.04. PVC CORRUGATED FLEXIBLE PIPE

PVC corrugated flexible pipe, 16mm nominal diameter, flame insulating and non-propagating, 1J impact resistance, 320N compressive strength and 2000 V dielectric strength.

PB = 130,00 m

PA = 35,00 m

P1 = 120,00 m

TOTAL = 285,00 m

02.01.05. COPPER CONDUCTOR CABLE

Cable with 0.6 / 1 kV copper conductor of assigned voltage, with designation RZ1-K (AS), unipolar, section 1 x 2.5 mm², with cover of the polyolefin cable with low smoke emission, placed in tub.

PB = 130,00 m

PA = 35,00 m

P1 = 120,00 m

TOTAL = 285,00 m

02.02. MANUAL FIRE ALARM SYSTEM

02.02.01. ALARM PUSHBUTTON

Alarm pushbutton for installation against conventional fire, manual actuation for breaking of fragile element, according to standard UNE-EN 54-11, superficially mounted.

PB = 4,00 UNITS

PA = 1,00 UNITS

P1 = 3,00 UNITS

TOTAL UNITS = 8 UNITS

02.02.02. ELECTRONIC SIREN

Electronic siren for conventional and analog installation, acoustic power level 100 dB, with light signal and multitone sound, degree of protection IP-54, manufactured according to the UNE-EN 54-3 standard.

PB = 3,00 UNITS

P1 = 1,00 UNITS

TOTAL UNITS = 4,00 UNITS

02.02.03. FIRE DETECTION CONTROL UNIT.

Conventional fire detection control unit for 2 zones, with double power supply, with automatic self-analysis functions with power indicator, zone, fault, zone connection and alarm test, and mounted on the wall.

PB = 1,00 UNITS

TOTAL UNITS = 1,00 UNITS

02.02.04 PVC CORRUGATED FLEXIBLE PIPE

PVC corrugated flexible pipe, 16mm nominal diameter, flame insulating and non-propagating, 1J impact resistance, 320N compressive strength and 2000 V dielectric strength, built-in mounting.

PB = 65,00 m

PA = 10,00 m

P1 = 40,00 m

TOTAL = 115,00 m

02.02.05 COPPER CONDUCTOR CABLE.

Cable with copper conductor of assigned voltage less than or equal to 450/750 V, designation H07V-R, construction according to UNE-EN 50525-2-31, unipolar, section 1x1.5 mm², with PVC insulation, class of reaction to fire ECA according to REGULATION (EU) 2016/364, placed in tube.

PB = 65,00 m

PA = 10,00 m

P1 = 40,00 m

TOTAL = 115,00 m

02.03. BIES.

02.03.01. EQUIPPED FIRE HYDRANT

Equipped fire hydrant 25mm in diameter, BIE-25, consisting of painted sheet steel cabinet and door with steel frame and glass visor, including BIE (hinged axial feed winder, 20m hose lance), to be placed on the surface, including a proportionate part of accessories and all the small auxiliary material for connection and assembly.

PB = 2,00 UNITS

P1 = 2,00 UNITS

TOTAL UNITS = 4,00 UNITS

02.04. FIRE EXTINGUISHERS

02.04.01. DRY POWDER MANUAL FIRE EXTINGUISHER

Multi-purpose dry powder manual fire extinguisher, load 6 kg, with built-in pressure, painted, with wall support.

PB = 7,00 UNITS

PA = 2,00 UNITS

P1 = 6,00 UNITS

TOTAL UNITS = 15,00 UNITS.

02.04.02. MANUAL CARBON DIOXIDE FIRE EXTINGUISHER

Manual carbon dioxide fire extinguisher, load 5 kg, with built-in pressure, painted, with wall support.

PB = 1,00 UNITS

TOTAL UNITS = 1,00 UNITS.

02.05. SIGNAGE

02.05.01. EXIT PANEL SIGN.

0.7 mm thick, photoluminescent PVC panel exit signpost, according to UNE 23035-4, placed attached on vertical facing.

PB = 4,00 UNITS

PA = 2,00 UNITS

P1 = 2,00 UNITS

TOTAL UNITS = 8,00 UNITS.

02.05.02. EVACUATION SIGN.

0.7 mm thick PVC panel evacuation signpost, photoluminescent, according to UNE 23035-4, placed upright on vertical facing.

PB = 5,00 UNITS

PA = 2,00 UNITS

P1 = 6,00 UNITS

TOTAL UNITS = 13,00 UNITS.

02.05.03. FIRE.FIGHTING UTENSIL SIGN.

0.7 mm thick PVC panel fireproof signage equipment, photoluminescent, according to UNE 23035-4, placed attached on vertical facing.

MANUAL PUSHBUTTON = 8,00 UNITS

BIES= 4,00 UNITS

FIRE EXTINGUISHERS CO₂ = 1,00 UNITS

FIRE EXTINGUISHER POWDER = 15,00 UNITS

TOTAL UNITS = 28,00 UNITS.

02.06 TOTAL COST OF ALL PARTS

Once all the instruments have been described, and knowing the unit price of each one of them, we will obtain the total cost in the following table:

DESCRIPTION	UNITS	UNIT COST (€)	TOTAL COST (€)
AC CLASS DIFERENTIAL SWITCH	1,00	50,00	50,00
MT AUTOMATIC SWITCH	1,00	60,00	60,00
NP AND NW LIGHT	47,00	31,69	1489,43
PVC CORRUGATED FLEXIBLE PIPE	400,00	86,00 (100m)	344,00
COPPER CONDUCTOR CABLE	400,00	32,00 (100m)	128,00
ALARM PUSHBUTTON	8,00	15,00	120,00
ELECTRONIC SIREN	4,00	93,00	372,00
FIRE DETECTION CONTROL UNIT	1,00	450,00	450,00
EQUIPPED FIRE HYDRANT	4,00	60,00	240,00
POWDER M. FIRE EXTINGUISHER	15,00	30,00	450,00
CO ₂ MANUAL FIRE EXTINGUISHER	1,00	70,00	70,00
EXIT PANEL SIGN	8,00	7,25	58,00
EVACUATION PATH SIGN	13,00	7,25	94,25
FIREFIGHTING UTENSIL SIGN	28,00	5,00	140,00
TOTAL			4065,68

The total cost of equipping all the necessary utensils is 4065,68€.

03. INDIRECT COSTS

Imposing a total economic margin of 20%, we find that the total indirect cost is **1188,64€**.

04. TOTAL COSTS

Once the economic cost of each of the previous sections has been obtained, we will group them here, summarizing in a table the total cost of the execution of the project.

DESCRIPTION	COST (€)
Cost from construction variation	1877,50
Cost of needed utensils	4065,68
Indirect costs	1188,64
TOTAL	7131,82

The final cost of executing the project will therefore be **7131,82€**.