



Costruzioni Prefabbricate Componibili

COMPONABLE MODULAR INSULATED PREPAINTED

TECHNICAL FEATURES

REFERRING NORMS

Our prefabricated buildings are projected to respect the following referring norms:

- Legge 1086/71: “Norme per la disciplina delle opere di conglomerato cementizio armato. Normale e precompresso ed a struttura metallica”.
- D.M. 14.02.92: “Norme tecniche per l’esecuzione delle opere in cemento armato normale e precompresso e per le strutture metalliche”.
- D.M. 9.1.96: “Norme tecniche per il calcolo, l’esecuzione ed il collaudo delle strutture in cemento armato, normale e precompresso e per le strutture metalliche”.
- Legge 64/74: “Provvedimenti per le costruzioni con particolari prescrizioni per le zone sismiche”.
- D.M. 16.1.96: “Norme tecniche relative ai “Criteri generali per la verifica di sicurezza delle costruzioni e dei carichi e sovraccarichi”.
- D.M. 16.1.96: “Norme tecniche per le costruzioni in zone sismiche.
- Circolare Min. LLPP 4.7.96: Istruzioni per l’applicazione delle “Norme tecniche per le costruzioni in zone sismiche” di cui al D.M. 16.1.96.
- CNR-UNI 10011/86: Costruzioni di acciaio – Istruzioni per il calcolo, l’esecuzione, il collaudo e la manutenzione.
- Tutte le norme UNI riferite ai materiali utilizzati per la realizzazione dei prefabbricati.
- Legge 9.1.91 n. 10: “Norme per l’attuazione del nuovo Piano energetico nazionale in materia d’uso razionale di energia, di risparmio energetico e di sviluppo delle fonti rinnovabili di energia”.
- DPR 547 del 27/04/55;
- L 186 del 01/03/68;
- DM del 10/04/84;
- L 46 del 05/03/90
- DPR 447 del 06/12/91.
- CEI 16-04 Caratteristiche elettriche per connessioni di rame, di alluminio e leghe di alluminio;
- CEI 11-08 Impianti di produzione, trasmissione e distribuzione energia elettrica. Impianti di terra;
- CEI 16-04 Individuazione dei conduttori isolati e dei conduttori nudi tramite colori,
- CEI 17-05 Apparecchiature a bassa tensione. Parte 2°: interruttori automatici;
- CEI 17-11 Apparecchiature a bassa tensione. Parte 3°: interruttori di manovra, sezionatori, ecc.;
- CEI 17-13 Apparecchiature assiemate di protezione e manovra per basse tensioni (quadri BT);
- CEI 20-20 Cavi isolati con polivinilcloruro con tensione nominale non superiore a 450/750 V;
- CEI 20-22 Prove d’incendio su cavi elettrici;
- CEI 23-03 Interruttori automatici per la protezione dalle sovracorrenti per impianti domestici e similari;
- CEI 23-19 Canali portacavi in materiale plastici;
- CEI 32-01 e CEI 32-04 Fusibili;
- CEI 64-08 Impianti elettrici utilizzatori a tensione nominale non superiore a 1000V in corrente alternata e a 1500V in corrente continua;
- CEI 64-02 Impianti elettrici in luoghi con pericolo di esplosione.



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SUPPORTING STRUCTURE

Supporting structure is constituted of portals, installed at a range of m. 3.829 and 2.626, composed by one truss and two pillars.

These portals are main frame of support for both vertical loads, due to snow, and for horizontal loads, due to wind and earthquake.

Also, they are constituted by iron S275JR (ex Fe 430) open section profiles, adequately dimensioned to support loads forecasted from actual norms.

Supporting structure are completed with a system of purlines, opportunely bolted on the trusses upon the knots , on which is assembled covering.

Supporting structure components are assembled by bolts without any welding.

Supporting structure components are treated with anti-oxide primer. External surfaces are also varnished.

The building is assembled as follow, after concrete slab realization and laying feeder and outlet pipes under floor:

- a) supporting structure;
- b) external panels;
- c) covering;
- d) internal panels;
- e) aluminium frames;
- f) electric and fire alarm plants;
- g) ceiling;
- h) hydraulic-sanitary plant enclosed storage boiler;
- i) heating and hot water production plants;
- j) cooling;
- k) floor covering (at your charge and expenses).

COLOURS

Our standard colours are: light grey for structural elements at sight and for external and internal walls and dark green for aluminium frames. Others colours combinations can be considered.

EXTERNAL WALLS

External walls are constituted from modular sandwich panels composed as follow:

- External galvanized pre-painted sheet thick mm 0,60;
- Insulation in self extinguishing injected polyurethane foam (35-40 Kg/mc density) thick mm 49.3;
- Internal galvanized pre-painted sheet thick mm 0,60;
- Polystyrene extruded clapboard along panel perimeter edge thick mm 10;

Total thickness mm 50.

The thermal transmittance coefficient is 0,455 W/sq m K.

Junctions between panels is permitted by special H profiles in PVC.

ROOFING

Saddle roof, about 14 grade slope, constituted from dark green sandwich panels composed as follow:





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- External ribbed galvanized pre-painted sheet thick mm 0,5;
- Insulation in self extinguishing injected polyurethane foam (35-40 Kg/mc density) thick mm 50 + 40;
- Internal galvanized sheet thick mm 0,5;

Total thickness mm 50 + 38;

The thermal transmittance coefficient is 0,445 W/sq m K.

Loading capacity is 150 Kg/sq m.

Gutters are in galvanized dark green pre-painted sheet thick mm 0,80 and jut out mm 500 on long sides.

Roof top in press bended galvanized pre-painted sheet thick mm 0,80.

Waterproof of junction between roof top and roof panels is guaranteed by adequate gasket.

CEILING

It's composed of panels which are held by pre-painted steel profile fixed to the supporting structure. The panels are in rock wool, dim. mm 600 x 1200 x15, class 1 of fire resistance, with internal side finished.

To improve a better thermal exchange, on the short sides of prefabricated building, in the middle of gables, between roof and ceiling, are installed two air gratings.

INTERNAL WALLS

Internal walls are constituted from modular sandwich panels composed as follow:

- Two galvanized pre-painted sheet thick mm 0,45;
- Insulation in self extinguishing injected polyurethane foam (35-40 Kg/mc density) or polystyrene foam (20 kg/mc density) thick mm 39,1;

Total thickness mm 40.

These panels are fixed by C galvanized pre-painted sheet profiles, at the top and at the base, permitting easy translation of them.

FRAMES

They are in pre-painted aluminium obtained from special profile R40 in number and typologies as requested and assuring light surface 10% of the room area base.

In details, normally we supply:

- P1 external door one wing mm 1160x2700h with inferior insulated panel thick mm 20, superior panel in double glass mm 4-9-4, security handle and over light wasistas opening, h mm 500, completed of double glass mm 4-9-4 and mosquito net.
- P5 external door one wing mm 1160x2700h with inferior an superior insulated panels thick mm 20, security handle and over light wasistas opening, h mm 500, completed of double glass mm 4-9-4 and mosquito net.
- P3 internal door one wing mm 900x2700h with inferior an superior plasticized wood panels thick mm 4, handles and over light wasistas opening, h mm 450, completed of glass.
- P8 internal WC door one wing mm 700x2000h with inferior an superior plasticized wood panels thick mm 4, handles.
- F2 windows two wings mm 1560x1760h completed of double glass mm 4-9-4, rolling PVC shutter and mosquito net.



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- W windows wasistas opening mm 1160x550h completed of double opaque glass mm 4-9-4 and mosquito net.

HYDRAULIC PLANT

It's realized to permit a fast installation and an easy maintenance because pipes, in polybutylene, are from us applied on the internal walls at sight.

Supplying and laying into the concrete slab (under floor covering) of outlet pipes of dirty and white waters and feeder pipes of water and fuel oil will be realized, at your charges and expenses, according to drawings and holes map which we'll supply you.

Materials which will be used are:

Sanitary tools, in number and typologies as requested, are in vitreous-china of commercial dimension, white colour and taps are in chromate brass while accessories (soap dish, mirror with console, hold roll, water closet cover, etc.) are in rigid PVC.

HEATING PLANT AND HOT WATER PRODUCTION PLANT

Normally is composed from one (or more) wall boiler of adequate thermal potentiality, feeded with fuel oil or electricity.

The plant will provide a circulation of water which will find the natural termination in aluminium radiators in number enough to assure a comfortable leaving of the rooms.

COOLING

It can be forecasted supply of wall type **split** pump heating cycle or **monobloc** conditioners of adequate potentiality with, on request, additional electric resistance.

ELECTRIC PLANT

The prefabricated building has electric boards where have to be installed automatic and magneto-thermic differential switches which will protect distribution.

Conditions normally considered are 220-230 V and 50 Hz frequency.

Main components of electric plants are:

- Electric boards
- Sockets plant
- Ordinary lighting plant
- Emergency light plant
- Earth connection of electric plant

In details:

- unipolar switches;
- unipolar IP55 switches;
- double unipolar switches;
- boiler switch;
- push buttons for timer lamp;
- 10/16 A sockets;
- 10/16 A IP55 sockets;
- 2P+T 16A socket with switch;
- neon lamps 1x36W;

Ames S.p.A.
S.P.323 – Pagliarone S.Vito – km 1.00
I – 84090 Montecorvino Pugliano/Salerno
Tel. 0828/359111 - Fax 0828/350116
Ufficio di rappresentanza
I – 00186 Roma, via della Scrofa 39
Tel. 06/6869720 - Fax06/68307936



Capitale Sociale interamente versato
€774.750,00
Tribunale di Salerno N. 445/79
CCIAA SA N. 169400
P. IVA e C.F. 00751780651
http://www.ames.it
E-mail: ames@ames.it

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- IP 55 neon lamps 1x36W;
- neon lamps 2x36W;
- IP55 neon lamps 2x36W;
- external lamps with crepuscular;
- emergency lamps 18W;
- electric boards;

FIRE ALARM PLANT (on request)

The installation can be composed of different gearboxes for fire revelation which can receive alarm signals from optical smoke revelations.

Plant, completed with acoustic alarms, can be activated from alarm push buttons.

Fire extinguishers will be supplied in each building.

FOUNDATIONS AND FLOOR COVERING

Concrete slab and floor covering have to be realized from customer according drawings supplied from AMES S.p.A.



UNI EN ISO 9002
CERTIFICATO N. 137