This invention relates to building units for cavity roofs and walls and to roofs and walls made therefrom.

The principal object of this invention is to provide corrugated units made from sheet material, e.g. asbestos-cement, from which a cavity roof, wall or partition can readily be constructed.

Another object is to provide a cavity roof, wall or partition constructed from corrugated units of sheet material.

The annexed drawings show the preferred embodiment of the invention and in them:

Figure 1 is a perspective view of part of one unit; Figure 2 shows part of a roof built up from the units; and Figure 3 is an enlarged cross-section illustrating the overlapping of two units.

The unit shown in Figure 1 is made from asbestos cement and is 8 feet long and just under 4 feet wide. It has a central corrugated part composed of one trough 1 and one inverted trough 2 with a common inclined wall 3. From the free wall 4 of the trough the sheet extends horizontally at 5 through a distance about equal to the width of the trough, being then stepped upwardly at 5 through a distance equal to the thickness of the material, and continuing as a flat part 7. Similarly the sheet extends horizontally at 8 in the opposite direction from the free wall 9 of the inverted trough, being then stepped downwardly at 19 corresponding to the upward step 6, and continuing as a flat part 11. The flat parts 7 and 11 and the central corrugated part each constitute about one third of the total width.

It will be seen that stated broadly the unit has a central corrugated part composed of a pair of troughs, one trough being inverted relatively to the other and the two troughs being of the same depth and having a common inclined wall, and a flat part at each side of the corrugated part, one flat part lying below the bottom of one trough by a distance substantially equal to the thickness of the material, and the other flat part lying above the top of the other or inverted trough by a similar distance. If desired there may be more than one such pair of troughs in the corrugated part, the bottoms of the troughs proper then lying in one plane and those of the inverted troughs in another plane.

When assembled in conjunction with other units on supports 12 having their centre lines 8 ft. apart from one another, as shown in Figure 2, the upper horizontal flat part 7 of one unit passes over the trough 1 and inverted trough 2 of the next unit and rests on the ledge formed by the flat part 5 of the next unit. Its upper surface is thus brought flush with that of the part 7 of the next unit, as the step 6 is equal in depth to the thickness of the sheet. Similarly the lower horizontal flat part 11 of the first unit passes under the corrugations of the adjacent unit on the other side and lies beneath the part 3 of this unit, thus forming a level under surface. It will be seen that each short flat part, 5 or 8 constitutes a ledge which is overlapped by the free edge of another unit.

In consequence of the method of assembly described, the assembled units provide opposite and substantially flat roof or wall surfaces separated by the walls of the corrugations, the space between the opposed surfaces being divided into cavities formed by the interiors of the troughs and by the spaces between an end trough in one unit and the first (and relatively inverted) trough in the next unit.

The presence of the corrugations imparts such rigidity to the whole unit that the units can be assembled on rafters or other supports spaced widely apart from one another, e.g. at twice the usual spacing. The cavities give all the usual advantages of thermal insulation and so forth.

In the assembled units the resultant effect is of two flush surfaces separated largely by a series of cavities and held apart by the walls of the corrugations. In a roof, either flat or pitched, a weatherproof covering such as bituminous felt or asphalt may be applied to the outer surface, while the inner surface provides the ceiling to the room below, the air-spaces providing suitable housing for electric conduits or other services. When the units are used for walls or partitions no additional covering is normally necessary.

The units shown may be modified. For instance, the corrugated part need not lie exactly in the middle of the unit, provided that the flat parts are of such length that when the units are overlapped there is a continuous flat surface at each face. However, it is most convenient to make each flat part and the corrugated part about one third of the total width.

I claim:

1. A building unit made from asbestos cement sheet material and formed with a central corrugated part having at least one pair of troughs of the same depth, one trough in each pair being inverted relatively to the other, and a flat part at each side of said corrugated part, one of said flat parts lying below the bottom of a trough or series of troughs by a distance substantially equal
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to the thickness of the material, and the other of said flat parts lying above the top of the other or
inverted trough or series of troughs by a similar distance.

2. A building unit according to claim 1 in
which each flat part and the corrugated part constitute one third of the total width.

3. A building unit according to claim 1 in
which the corrugated part merges at each side into the adjacent flat part by a short flat part
stepped inwards by the thickness of the material from said adjacent flat part.

4. A building unit made from asbestos cement sheet material and formed with a central corru-
gated part constituted by a pair of troughs, one
inverted relatively to the other and the said troughs having a common inclined wall between
them, and a flat part at each side of said corru-
gated part, one of said flat parts lying below
the bottom of one of said troughs by a distance
substantially equal to the thickness of the mate-
rial and the other of said flat parts being above
the top of the other and relatively inverted trough
by a similar distance.

5. A building unit as defined in claim 4 in
which said corrugated part merges at each side
into said adjacent flat part by a short flat part
stepped inwards from said adjacent flat part by
the thickness of the material.

6. A cavity roof or wall formed from asbestos
cement units each having a central corrugated
part composed of at least one pair of troughs
both or all of the same depth, one trough in each
pair being inverted relatively to the other, and
a flat part at each side of the corrugated part,
one flat part lying below the bottom of a trough
or troughs by a distance substantially equal to
the thickness of the material, and the other flat
part lying above the top of the other or inverted
trough or troughs by a similar distance, and the
units overlapping to provide opposite and sub-
stantially flat roof or wall surfaces separated by
the walls of the corrugations, the space between
the opposed surfaces being divided into cavities
formed by the interiors of the troughs and by the
spaces between an end trough in one unit and the
first (and relatively inverted) trough in the next
unit.

7. A cavity roof or wall according to claim 6 in
which the corrugated part of each unit merges
at each side into the adjacent main flat part by
a short flat part stepped inwards by the thickness
of the material from the main flat part, each such short flat part constituting a ledge
which is overlapped by the free edge of another
unit.

8. A building unit made from asbestos cement sheet material and formed with a central corru-
gated part having at least one pair of troughs of
the same depth; the troughs having divergent
side walls, one trough in each pair being inverted
relatively to the other and each pair of troughs
having a common inclined side wall between
them; and a flat part at each side of said corru-
gated part, one of said flat parts lying below
the bottom of a trough or series of troughs by a dis-
tance substantially equal to the thickness of the material, and the other of said flat parts lying
above the top of the other or inverted trough or
series of troughs by a similar distance.

9. A building unit according to claim 8 in
which the corrugated part merges at each side
into the adjacent flat part by a short flat part
stepped inwards by the thickness of the material
from said adjacent flat part.

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