

AJIYA® PEVA 50
COMPOSITE FLOOR DECKING
STRUCTURAL PRODUCT



AJIYA® PEVA 50 PROFILED STEEL COMPOSITE FLOOR DECKING

It is a new way of building combined lying of the form and reinforcing and gives thus remarkable saving in materials, work and expenses, When laying the form only a sparse support from below is needed. The distance between the supports varies from 1.0m to 2.0m depending on the thickness of the sheet and the concrete layer. The slab acts as a reinforced concrete slab because of the bond between the sheet and the concrete. The lug ridges of the troughs of the sheet create this bond. In tests carried out the adhesion forces were 13-16 k/N lugs, and the sheet reaches its yield point before the bond breaks. In calculations the whole cross section of the sheet can be used as the effective steel area.

MATERIAL AJIYA PEVA 50 PROFILED STEEL COMPOSITE FLOOR DECKING

It is made of steel sheet Z36-27N by rolling. It is available in thickness between 0.8mm and 1.0mm. The zinc coating (both sides together) is 275 g/m². The sheet is also available surface coated with PVC Plastisol permitting the customer to select the desired color for the underside of the sheet.

FIRE STANDARDS

The requirements of fire resistance standard A30 are met with the sheet only, A60 standard is met if the spans are not long. In other cases additional reinforcement, fire resistant paint, suspended ceilings or other surfacing can be used.

LIGHTER STRUCTURES, SAVING IN MATERIALS.

When using **AJIYA PEVA 50** profile steel sheet the structure is:

- Lighter as less concrete and reinforcement are needed.
- Less time is spent as laying the form and reinforcing are combined in a single stage
- No timber is wasted and no discharging and cleaning of form is needed.
- The worksite is orderly and working under the structure is possible immediately after casting.

APPLICATION

Application of **AJIYA PEVA 50** profiled sheet widely used at:

- Residential buildings
- Business premises
- Industrial buildings
- Schools and hospitals
- Public building in general
- Agricultural buildings
- Bridges and other constructions used by traffic

SOUND PROOFING

A sound proofing capacity of 52 dB often needed in floors is achieved with an overall thickness of 130mm of the slab. If greater sound proofing capacity is required, additional proofing can easily be installed.

WIDE USAGE

AJIYA PEVA 50 profiled sheet can be used in constructions with all types of frames:

- Steel Structures
- In situ cast reinforced concrete structures
- Per-cast structures
- Wooden structures



*Cut to size steel sheets are easy and quick to assemble.
The sparse support cuts down the form expenses*



The Peva 50 profiled steel sheet is ideal also for steel buildings.



TEMPORARY PROPPING TABLE

t = 0.8 mm	Maximum Span L (mm)							
Slab Depth	100	120	140	160	180	200	220	240
One Span								
Unpropped	1507	1420	1349	1278	1207	1175	1136	1097
1 Row Prop	3116	2935	2753	2572	2477	2335	2248	2154
2 Row Prop	4868	4497	4229	4039	3763	3668	3487	3306
Two Or More Span								
Unpropped	1554	1459	1373	1278	1231	1183	1112	1065
1 Row Prop	3211	2935	2753	2659	2477	2382	2288	2201
2 Row Prop	4781	4497	4134	3945	3763	3582	3392	3306

t = 1.0 mm	Maximum Span L (mm)							
Slab Depth	100	120	140	160	180	200	220	240
One Span								
Unpropped	1641	1530	1436	1365	1325	1254	1231	1183
1 Row Prop	4781	4457	4229	4000	3858	3629	3582	3487
2 Row Prop	7171	6714	6343	5980	5791	5514	5333	5191
Two Or More Span								
Unpropped	2382	2248	2248	2012	1925	1854	1783	1736
1 Row Prop	4781	4457	4457	3992	3858	3676	3582	3487
2 Row Prop	7171	6714	6714	5980	5791	5514	5333	5191

LOAD / SPAN TABLES (Normal Weight Concrete)

These tables give the maximum span (m) for different thicknesses of PEVA 50 composite slabs. The weight of the steel sheet and the concrete have been taken into account.

Concrete Grade:-C25 (25 MN / m²) and C35 (35 MN / m²).

IMPOSED LOAD :- 2.5 kN / m²

SLAB DEPTH (mm)	STEEL THICKNESS (mm)	SINGLE SPAN		TWO SPANS		THREE SPANS		FOUR SPANS	
		C25	C35	C25	C35	C25	C35	C25	C35
100	0.8	3.2	3.2	2.5	3.1	2.8	3.4	2.7	3.3
100	1.0	3.2	3.6	2.5	3.1	2.8	3.4	2.7	3.3
120	0.8	3.3	3.4	3.2	3.7	3.5	4.0	3.4	3.9
120	1.0	3.6	3.8	3.2	3.7	3.5	4.0	3.4	3.9
140	0.8	3.5	3.6	3.7	4.3	4.1	4.3	3.9	4.3
140	1.0	3.8	3.9	3.7	4.3	4.1	4.7	3.9	4.6
160	0.8	3.6	3.7	4.2	4.6	4.3	4.4	4.4	4.5
160	1.0	3.9	4.0	4.2	4.8	4.6	4.9	4.4	5.0
180	0.8	3.7	3.8	4.5	4.7	4.4	4.5	4.5	4.6
180	1.0	4.1	4.2	4.5	5.1	4.9	5.0	4.8	5.0
200	0.8	3.8	3.9	4.7	4.7	4.5	4.6	4.6	4.6
200	1.0	4.2	4.3	4.9	5.2	5.0	5.0	5.0	5.0
220	0.8	3.9	3.9	4.7	4.8	4.5	4.6	4.6	4.7
220	1.0	4.3	4.3	5.1	5.3	5.0	5.0	5.0	5.1
240	0.8	3.9	3.9	4.8	4.8	4.6	4.7	4.7	4.7
240	1.0	4.3	4.3	5.3	5.4	5.0	5.1	5.1	5.2

IMPOSED LOAD :- 5.0 kN / m²

SLAB DEPTH (mm)	STEEL THICKNESS (mm)	SINGLE SPAN		TWO SPANS		THREE SPANS		FOUR SPANS	
		C25	C35	C25	C35	C25	C35	C25	C35
100	0.8	2.7	2.8	2.1	2.7	2.3	2.9	2.9	2.3
100	1.0	2.8	3.0	2.1	2.7	2.3	2.9	2.9	2.3
120	0.8	2.9	3.0	2.8	3.2	3.0	3.5	3.5	2.9
120	1.0	3.2	3.3	2.8	3.2	3.0	3.5	3.5	2.9
140	0.8	3.1	3.2	3.3	3.8	3.6	3.8	3.8	3.5
140	1.0	3.4	3.5	3.3	3.8	3.6	4.1	4.1	3.5
160	0.8	3.2	3.3	3.7	4.1	3.9	3.9	3.9	3.9
160	1.0	3.6	3.6	3.7	4.3	4.0	4.3	4.3	3.9
180	0.8	3.3	3.4	4.1	4.3	3.9	4.0	4.0	4.0
180	1.0	3.7	3.8	4.1	4.7	4.4	4.5	4.5	4.3
200	0.8	3.5	3.5	4.3	4.3	4.1	4.2	4.2	4.2
200	1.0	3.8	3.9	4.5	4.8	4.6	4.6	4.6	4.6
220	0.8	3.6	3.6	4.4	4.4	4.2	4.3	4.3	4.3
220	1.0	3.9	3.9	4.8	4.9	4.7	4.7	4.7	4.7
240	0.8	3.6	3.6	4.5	4.5	4.3	4.3	4.3	4.3
240	1.0	4.0	4.0	4.9	5.0	4.7	4.8	4.8	4.8

IMPOSED LOAD :-10.0 kN / m²

SLAB DEPTH (mm)	STEEL THICKNESS (mm)	SINGLE SPAN		TWO SPANS		THREE SPANS		FOUR SPANS	
		C25	C35	C25	C35	C25	C35	C25	C35
100	0.8	2.2	2.3	1.7	2.2	1.8	2.3	1.8	2.2
100	1.0	2.2	2.4	1.7	2.2	1.8	2.3	1.8	2.2
120	0.8	2.4	2.5	2.3	2.7	2.4	2.8	2.4	2.8
120	1.0	2.6	2.8	2.3	2.7	2.4	2.8	2.4	2.8
140	0.8	2.6	2.7	2.8	3.2	2.9	3.1	2.8	3.2
140	1.0	2.8	2.9	2.8	3.2	2.9	3.4	2.8	3.3
160	0.8	2.8	2.8	3.2	3.4	3.2	3.2	3.2	3.3
160	1.0	3.0	3.1	3.2	3.7	3.4	3.6	3.3	3.7
180	0.8	2.8	2.9	3.5	3.6	3.4	3.4	3.4	3.5
180	1.0	3.2	3.2	3.5	4.0	3.7	3.8	3.7	3.9
200	0.8	3.0	3.0	3.6	3.7	3.6	3.6	3.6	3.6
200	1.0	3.3	3.4	3.9	4.2	3.9	3.9	3.9	4.0
220	0.8	3.1	3.2	3.8	3.9	3.6	3.6	3.6	3.7
220	1.0	3.4	3.5	4.0	4.3	4.0	4.1	4.1	4.1
240	0.8	3.1	3.2	3.9	3.9	3.7	3.8	3.8	3.8
240	1.0	3.6	3.6	4.0	4.4	4.1	4.2	4.1	4.3

THE DESIGN AND INSTALLATION OF AJIYA PEVA-COMPOSITE SLAB

The conventional design principles for reinforced concrete slabs can be used in designing composite slabs. The area of steel sheet is usually enough for underside reinforcement.

Transverse reinforcement is not needed if the load can be considered even and 1.5 - 2.5 kN/m². If transverse reinforce is needed it can be put straight on the steel sheets.

In the edges of the slabs normal reinforcement used. If the slab is a continuous structure upper reinforcement is used in the area above the support. The bearing of the AJIYA Peva 50 composite slab should be at least 50mm along the supporting walls and intermediate supports. The thickness of the composite slab should be at least 100mm. Laying the profiled steel sheet from is quick and easy. The sheets are delivered cut to size.

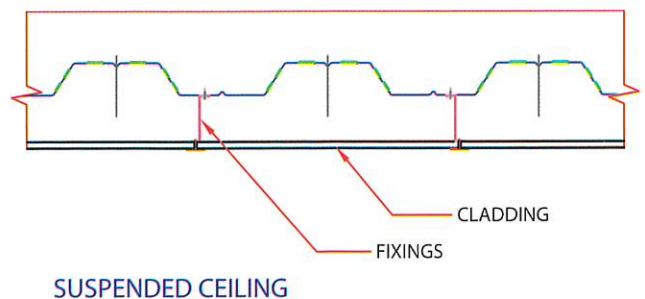
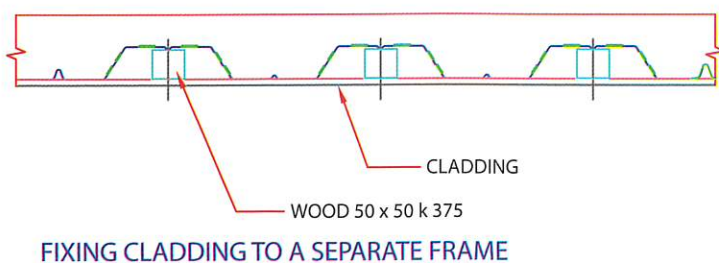
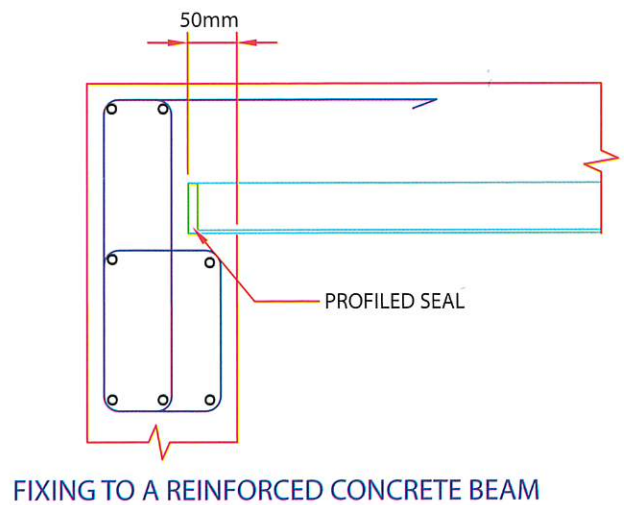
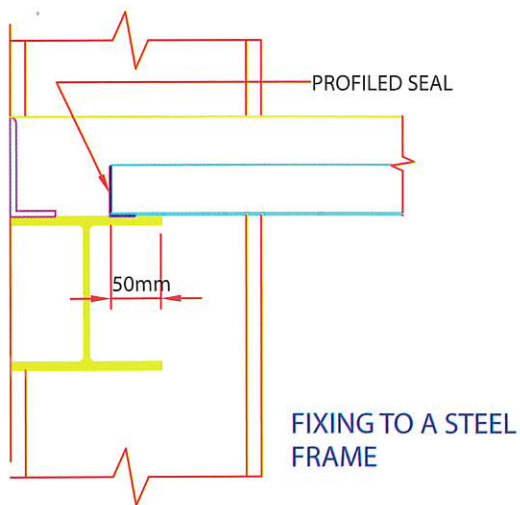
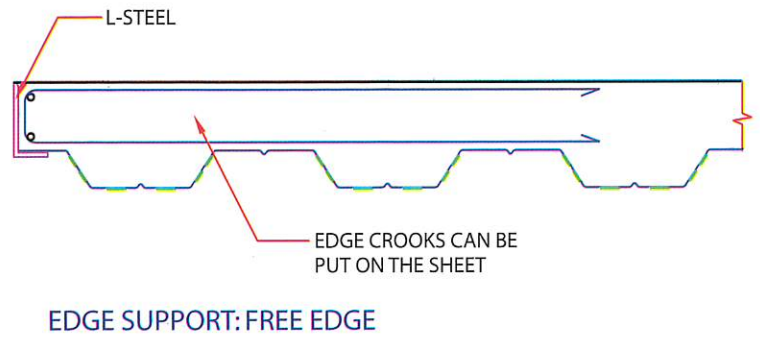
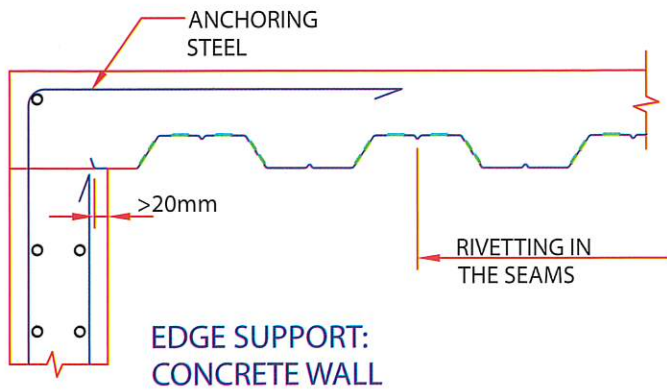
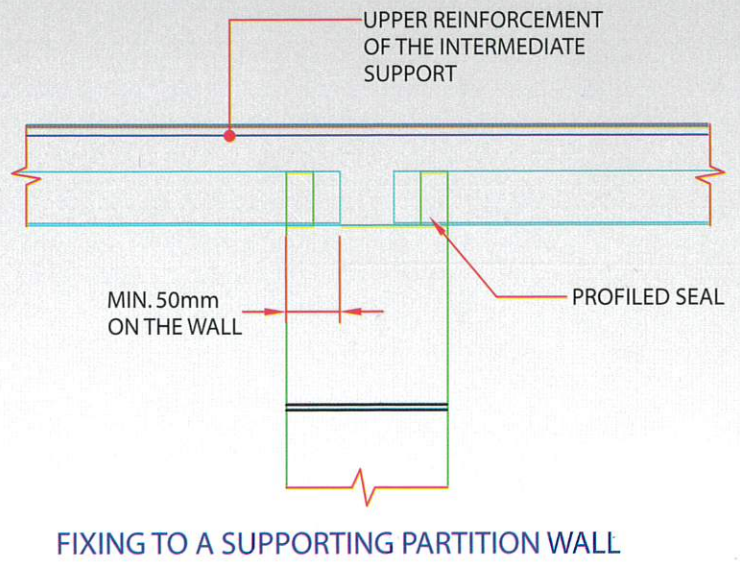
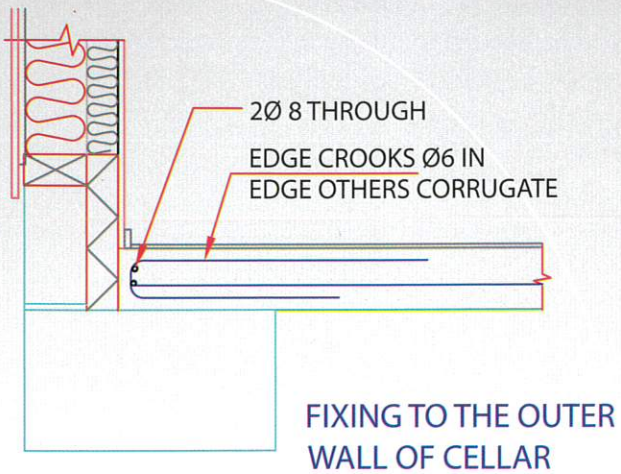
The sheets are set to their places, the seams are fixed with rivets distributed along the seam with a spacing not exceeding 500mm, the ends of the sheets are closed with profiled seals, steel strips or such like, and the form is ready, various holes can be made with a nibbling machine or an angle head roll grinder. Thinner sheets can be cut with shears.

COMPUTER PROGRAM - Design of Composite slab with PEVA 50 Profiled Steel Sheet

The proprietary software provide quick and comprehensive solutions in the design of PEVA 50 composite slab.

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AJIYA PEVA 50 CONSTRUCTION DETAILS





The sheets are light and easy to handle



M&E accessories (i.e. pipe electricity appliances) to be installed upon laying of steel decking



End of sheets are closed with profiled seal to prevent concrete over fend



Vibrated concrete pouring on to steel decking reinforced with mesh reinforcement



Concreting is on going



Concreting terminated at opening areas

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