ASTEEL GROUP

FLODEK II

STRUCTURAL FORMWORK

Speedier to Higher & Wider

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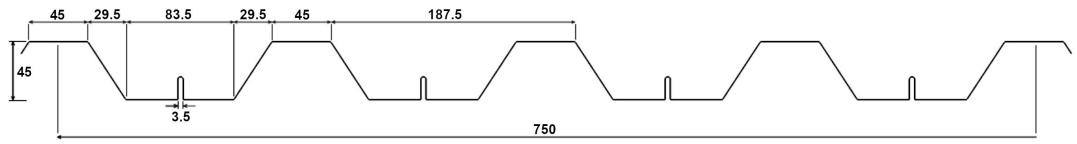
PROFILE DIMENSION



STEEL MATERIAL

FLODEK II is roll-formed from hot dipped, zinc-coated, high strength grade steel strips.
The features of FLODEK II is the profiled steel sheet acting as a longitudinal reinforcement to the composite beams and slabs. It is widely used for concrete slab construction and suitable for concrete, mansory or steel frame building construction.

MATERIAL SPECIFICATION

FLODEK II is manufactured from high tensile steel (min 500 MPa yield stress) with a base metal thickness (BMT) of 0.8mm and 1.00mm. The galvanised coating class is Z275 (min 275g/m2) in accordance with AS1397:2001.
Other base metal thicknesses and coating classes are also available on request, subjected to availability.

FEATURES

FLODEK II can deliver cost savings when used in the following types of construction:
a) Concrete frame building
b) Residential Construction
c) Multi-level carparks & multi-storey buildings
d) Commercial Buildings
e) Shopping centres

FIRE STANDARDS

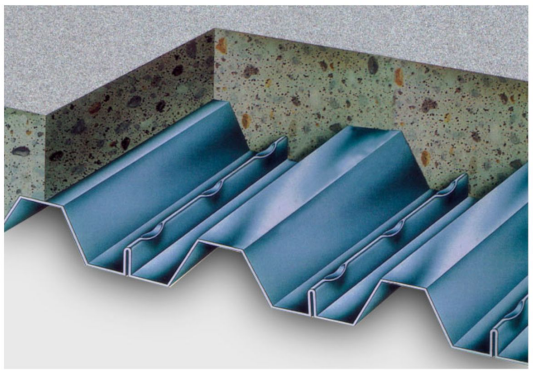
The requirements of fire resistence standard A30 are met with the sheet only. A60 standard is met if the spans are not long. In other cases additional reinforcement, fire resistant paint, suspended ceilings or other surfacing can be used.

SOUND PROOFING

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

BENEFITS

a) Permanent formwork
b) Tensile reinforcement, i.e replace all positive reinforcement
c) Composite construction, i.e. composite beam design reduces steel frame weight
d) Lower dead load reduces frame and foundation loading
e) Design up to four (4) hours fire resistance with exposed soffit
f) Quick and easy construction
g) Safe working platform
h) Simple construction with no specialized skills needed
i) No or minimal propping requirements
j) High structural efficiency due o high strength steel used
k) Stiffens supporting frame in tall steel buildings
l) Suitable for most ceiling finishes, i.e. painting to soffit, plastering
m) Easily cut and fitted to shapes
n) Shear studs can be site welded through-deck for composite action
o) Can be used on steelwork, concrete, blockwork and mansory structures
p) Ceiling and services can be easily suspended using in-house suspension systems



DESIGN FLEXIBILITY
TERMITE PROOF
RECYCLING
IMPROVED COATING
DURABILITY
ASTEEL GROUP PRODUCT

DESIGN REQUIREMENT

Nominal Thickness (mm)	Design Thickness (mm)	Cross Section (mm²/m)	Weight		Movement Capacity	
			(kg/m)	(kg/m²)	Sagging kNm/m	Hogging kNm/m
0.8	0.76	1126	8.00	10.67	2.98	3.17
1.0	0.96	1422	10.00	13.33	3.21	4.36

For propping tables and for final stage tables:

Deck Material
Zinc coated steel to BS 2989 Z35 (Minimum yield strength of 350MPa and zinc coating weight of 275g/m²).

Concrete (NWC)
The Concrete is assumed to be grade 25 or grade 35, with a maximum aggregate of size 20mm. The weight of concrete is taken to be normal weight 2400 kg/m3.

Construction Load
A 1.5 kN/m² construction load is taken into account in accordance with BS 5950 part 4.

Deflection
Deflection is limited to SPAN / 180 for the construction stage. Deflection under imposed load is limited to the minimum of SPAN/350 and 20mm. Deflection under total load excluding self weight of the slab is limited to SPAN/250.

Temporary propping may be used to reduce constructionn stage deflection but not extend the centres of permanent supports. Props must be left in place until the concrete has reached at least 70% of its design strength.

Imposed Load Capacity
Load capacities have been calculated without additional sagging reinforcement. For multiple spans, hogging moment capacity is limited to the value where compression reinforcement is not required.

Fire Resistance
FLODEK II composite slabs can easily achieve fire ratings, provided designed correclty. Please contact ASTEEL sales representatives for details.

Temporary Propping Table

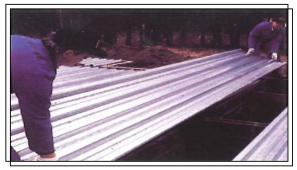
BMT	0.8mm							
Slab Thickness (mm)	100	120	140	160	180	200	220	240
One Span								
Unpropped	1910	1800	1710	1620	1530	1490	1440	1390
1 Row Prop	3950	3720	3490	3260	3140	2960	2850	2730
2 Row Prop	6170	5700	5360	5120	4770	4650	4420	4190
Two Or More Span								
Unpropped	1970	1850	1740	1620	1560	1500	1410	1350
1 Row Prop	4070	3720	3490	3370	3140	3020	2900	2790
2 Row Prop	6060	5700	5240	5000	4770	5440	4300	4190

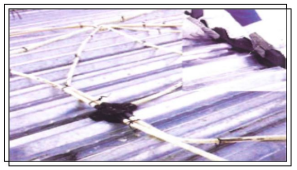
BMT	1.0mm							
Slab Thickness (mm)	100	120	140	160	180	200	220	240
One Span								
Unpropped	2080	1940	1820	1730	1680	1590	1560	1500
1 Row Prop	6060	5650	5360	5070	4890	4600	4540	4420
2 Row Prop	9090	8510	8040	7580	7340	6990	6760	6580
Two Or More Span								
Unpropped	3020	2850	2670	2550	2440	2350	2260	2200
1 Row Prop	6060	5650	5360	5060	4890	4660	4540	4420
2 Row Prop	9090	8510	8040	7580	7340	6990	6760	6580

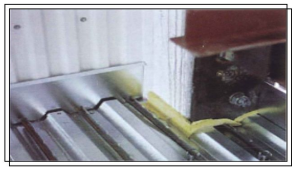
The conventional design principles for reinforced concrete slabs can be used in designning composite slabs. The area of steel sheet is usually enough for underside reinforcement.

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 FLODEK II composite slab should be at least 50mm along the supporting walls and intermediate supports. The thickness of the composite slab should be 100m. Laying the profiled steel sheet form is quick and easy. The sheets are delivered cut to size.

The sheets are set to their places, the seams are fixed ith 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 nibbling machine or an angle head roll grinder. Thinner sheets can be cut with shears.

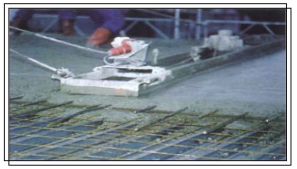

The sheets are light and easy to handle


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 inforcement


Concreting is on going


Concreting terminated at opening areas