

Plasti-Fab Design Manual

Split Floor Slabs

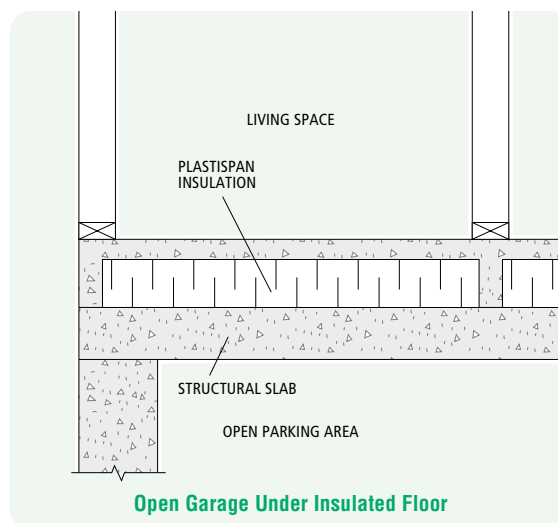




Split Floor Slabs

Insulated Slab

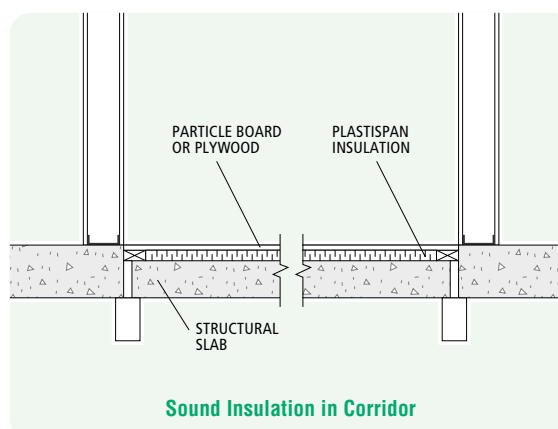
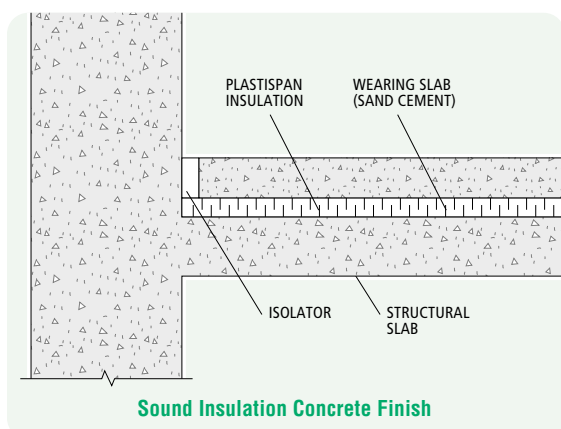
A split floor slab incorporates insulation into the slab yet retains concrete on each surface to meet the requirements for non-combustibility. This construction is suited for open parking under elevated buildings, entrance areas, cantilevered constructions, etc. The structural slab is poured in the normal manner and if necessary can be constructed to meet the fire rating required for the floor. Plasti-Fab PlastiSpan insulation is placed on the floor slab and a covering slab is poured over the insulation. The covering slab is normally reinforced to eliminate shrinkage cracks but does not contribute to the structural capacity of the slab and can be of minimum compressive strength concrete or sand - cement mixture. PlastiSpan insulation resists the absorption of moisture and is not affected by direct contact with the wet concrete. Care should be taken with concrete vibrators as the boards will float up if the wet concrete is forced under them.



Isolated Slab (for sound absorption)

Sound transmission through construction material is reduced by high mass materials that are capable of absorbing the sound energy. The sound will, however pass through a massive member unless it is isolated. PlastiSpan insulation is an excellent isolator because of its light density that prevents the transmission of sound from one structural component to

another. Relatively thin thickness of insulation 25 mm (1") is adequate. It is critical that there is complete isolation of the structural components, no concrete fins through the insulation, no metal connectors, or structural members passing through the sound isolation material. The covering slab may be of concrete, particle board or plywood.



Application

Choose application instructions from the general application instructions in the PlastiSpan brochure "Floor Insulation: Selection, Application and Specification."

The following instructions apply specifically to split floor slabs:

Insulated Slab

Lay insulation where shown on plans.

Finish

Lay reinforcing mesh and pour concrete to required thickness as shown on plans.

Isolated Slab

Concrete Wearing Slab

Lay insulation dry in two layers staggering joints so slab is completely covered with insulation;

OR

Lay insulation dry in single layer. Cover with polyethylene film and seal to wall so concrete cannot penetrate through insulation.

Nailable Finish

Lay 38 x 38 mm (2" x 2") nailer along edge of slab. Fix to sub slab using Gripcon fasteners, anchors, or powder actuated fasteners.

Lay insulation between nailers with tightly butted joints.

Nail particle board or plywood to the nailer. See note ().

OR

Bond insulation to structural slab using Plasti-Fab General Purpose Adhesive using a notched trowel.

Lay insulation into the adhesive on the slab.

Coat surface of insulation with Plasti-Fab General Purpose Adhesive using a notched trowel. Lay Particle Board or Plywood into the adhesive on the insulation. Keep off floor for 24 hours until adhesive sets.

Specification

Choose specification from specification section in the PlastiSpan brochure "Floor Insulation: Selection, Application and Specification."

Thermal Resistance of Split Slab Floor

SI VALUES ("RSI")	PLASTISPAN RIGID INSULATION THICKNESS					
	TOTAL CONCRETE THICKNESS	NONE	40 mm	50 mm	75 mm	100 mm
125 mm	0.21	1.25	1.51	2.16	2.80	3.45
150 mm	0.22	1.26	1.52	2.17	2.81	3.46
200 mm	0.25	1.29	1.55	2.20	2.84	3.49

*Add RSI 0.26 for every 10 mm of PlastiSpan Rigid Insulation over 125mm

SI VALUES ("RSI")	PLASTISPAN HD RIGID INSULATION THICKNESS					
	TOTAL CONCRETE THICKNESS	NONE	40 mm	50 mm	75 mm	100 mm
125 mm	0.21	1.33	1.61	2.31	3.01	3.70
150 mm	0.22	1.34	1.62	2.32	3.02	3.71
200 mm	0.25	1.37	1.65	2.35	3.05	3.74

*Add RSI 0.28 for every 10 mm of PlastiSpan HD Rigid Insulation over 125mm

IMPERIAL VALUES ("R")	PLASTISPAN RIGID INSULATION THICKNESS					
	TOTAL CONCRETE THICKNESS	NONE	1.5"	2"	3"	4"
5"	1.18	6.80	8.68	12.43	16.18	19.93
6"	1.26	6.88	8.76	12.51	16.26	20.01
8"	1.42	7.04	8.92	12.67	16.42	20.17

*Add R 3.75 for every 1" of PlastiSpan Rigid Insulation over 5"

IMPERIAL VALUES ("R")	PLASTISPAN HD RIGID INSULATION THICKNESS					
	TOTAL CONCRETE THICKNESS	NONE	1.5"	2"	3"	4"
5"	1.18	7.24	9.26	13.30	17.34	21.38
6"	1.26	7.32	9.34	13.38	17.42	21.46
8"	1.42	7.48	9.50	13.54	17.58	21.62

*Add R 4.04 for every 1" of PlastiSpan HD Rigid Insulation over 5"

All thermal resistances calculated using principles published in ASHRAE Handbook of Fundamentals. Values for floor construction include outside air film, structural slab insulation, wearing slab, and inside air film.