

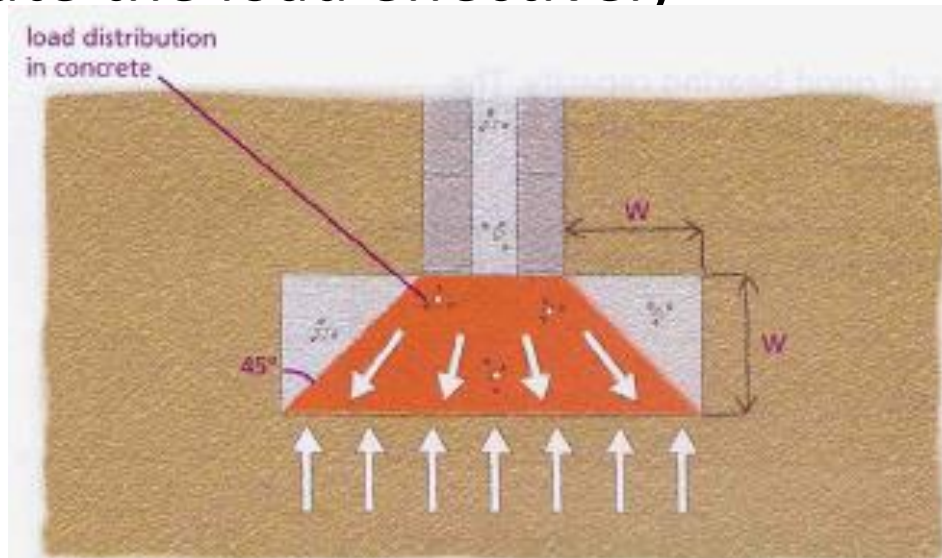
# Strip Foundation with Floating Ground Floor Detail



# Rational of Strip Foundation

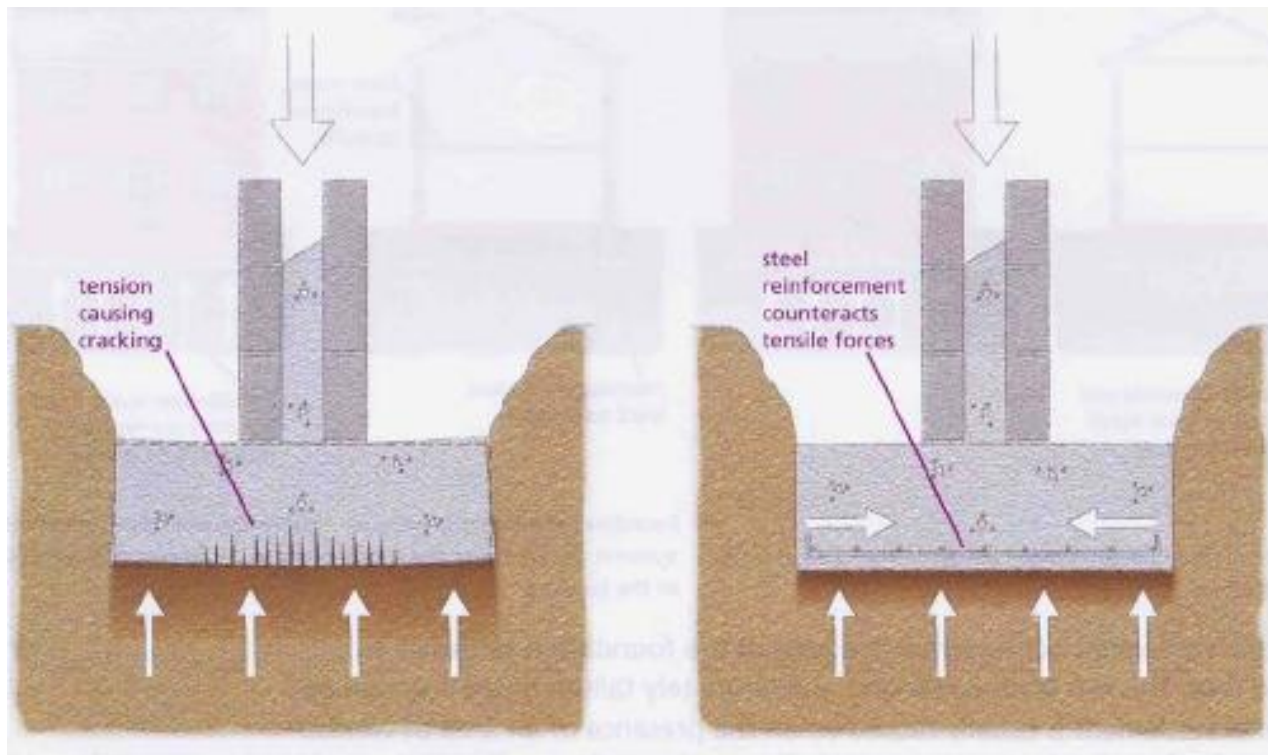
# Dimensions of Foundation (3WxW)

- This is because a concrete cavity wall is  $W$  thick and in a strip foundation the load is transmitted at a  $45^\circ$  angle from the base of the soil to the wall
- This means that the foundation must be 3 times the width of the wall and the same thickness to distribute the load effectively



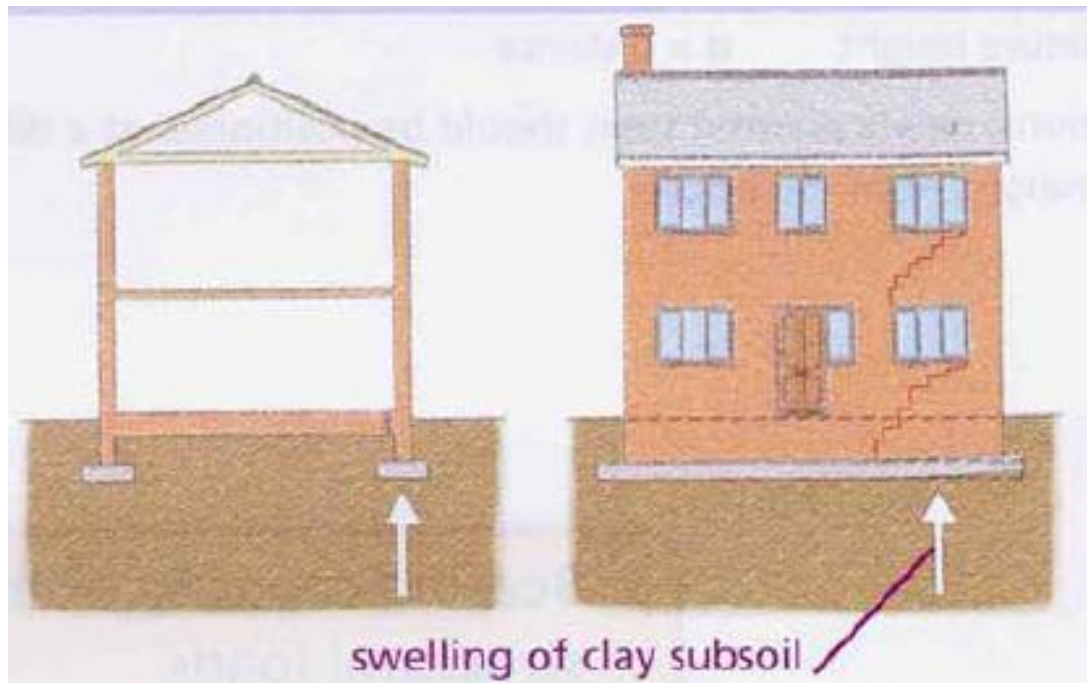
# Steel Strengthening Rods

- These rods increase the foundation's tensile strength (can carry more weight)



# 3W below Ground Level to Bottom of Foundation

- This is to avoid the effects of frost heave
- When the ground freezes it expands, this would cause the foundation to move if there was less than the 600mm below the ground.



# Cavity Fill

- Gives the wall more strength underneath the ground to resist the pressure from the soil and the *hardcore* acting on it and collapsing in on itself
- The top of the fill is sloped away from the house to prevent any moisture flowing in towards the inner leaf

# Cavity

The cavity in a cavity wall:

- Prevents moisture from passing from the outside of the house to the inside of the house
- Acts as an insulator as the air is a natural insulator



# Damp Proof Course (DPC)

- The damp proof course is placed in a course of block work to prevent moisture getting up the walls from the ground through capillary action



# 100mm Insulation

- Insulates the house from the cold outside air and also stops the warm air from escaping out through the walls



# Hardcore

- Compacted in layers no more than 225mm
- The hardcore is in place to support the floor
- If it was not used then the floor would be liable to sink into the ground as the soil would not be able to hold it up alone
- The hardcore bed must be a minimum of 150mm



# Sand Binding

- The sand binding on top of the hardcore is used to prevent the radon barrier and the DPM from being broken by sharp pieces of hardcore
- If the radon barrier was broken
  - Radon would be allowed up into the house
  - Moisture would move into the house using capillary action through the floor



# Radon Barrier



- Radon is a naturally occurring gas in the ground in Ireland
- It is produced by the decomposition of radium
- It is harmful due to its radioactivity
- The radon barrier reduces the amount of this harmful gas that enters the house

# 60mm Rigid Insulation

- This is in place so that heat is not lost through the floor
- It also prevents condensation forming on the floor (especially if ceramic tiles are the finish on the floor)



# Concrete Slab

- The concrete slab gives a finished floor level for the ground floor
- Distributes the load of furniture and people into the ground

