THERMAL SURFACES

Surface Heating & Cooling Specialists

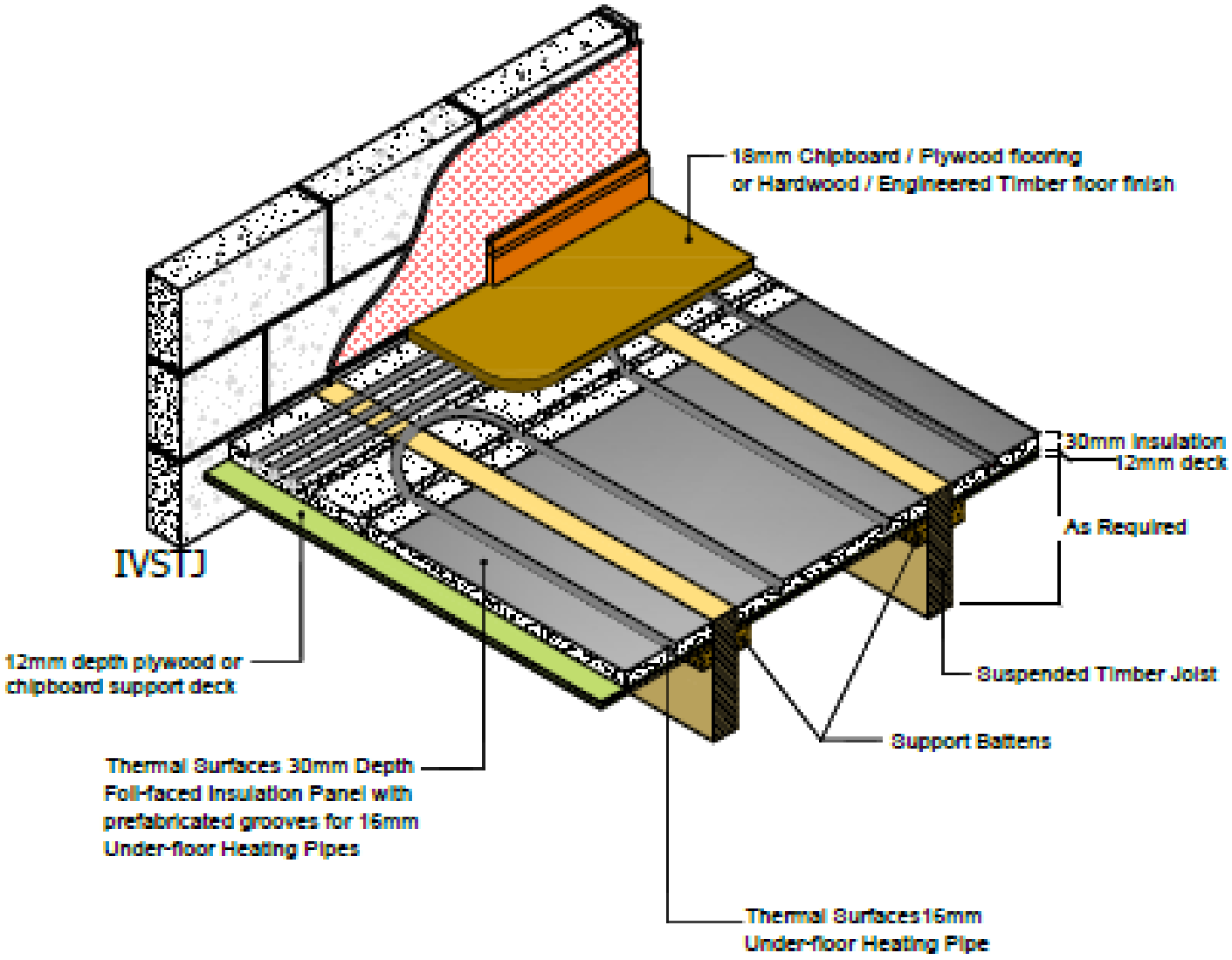
SUSPENDED TIMBER FLOORS

Thermal Surfaces underfloor heating and cooling systems can be incorporated in to many types of suspended timber floor construction. Typically timber floor underfloor heating systems are limited to outputs of up to 70 watts/m2 dependant on flow water temperature to the underfloor heating pipe-work and the floor finish type. This is due to the timber components being more sensitive to heat than solid floors and care must be taken when designing underfloor heating for timber floors that floor temperatures do not get high enough to adversely affect the timber. Timber is a natural material that is hygroscopic and when the underfloor heating is on the timber will dry out and shrink. When the underfloor heating is off for long periods such as during the summer the timber will absorb moisture in the environment and expand. It is very important that this expansion and contraction of the timber is allowed for when designing the timber floors to work in conjunction with underfloor heating.

Suspended Timber Floors are constructed using floor joists to support the implied loads on the floor. The joist can be of a traditional solid timer or a rationalised engineered joist that is more environmentally friendly and may have been manufactured from recycled materials. In most applications where underfloor heating is used with suspended timber floors heat diffusion plates are used as they help to conduct and spread the heat from the underfloor pipe-work through to the surfaces of the floor. The underfloor heating pipe-work is laid out in a serpentine pattern, which can still be a reversed return layout to ensure there is an even floor surface temperature across the room or area. In some cases such as apartments the intermediate suspended floor construction has to comply with Part E acoustic requirements to prevent the transmission of noise to floors above and below by acoustically separating the floor from the rest of the building fabric.

Please see typical floor sections below for two common types of suspended timber floor systems.

TYPICAL FLOOR SECTION
SUSPENDED TIMBER FLOOR - TRADITIONAL JOISTS



TYPICAL FLOOR SECTION
TIMBER FLOOR TO PART E ACOUSTIC REQUIREMENTS WITH ENGINEERED JOISTS