In–Slab Heating Cable

installation instructions and technical information

Prepare the Reinforcing Mesh

Ensure that the builder has arranged for all walls, fixtures and fittings to be marked on the reinforcing mesh so that the heating cable is not fixed under any fixtures or fittings.

Measure the Available Floor Area

Measure the available floor area of the zone, excluding areas under fixtures and fittings and a perimeter of 200mm along walls and obstacles unless otherwise specified by Livella.

Calculate the Required Cable Spacing

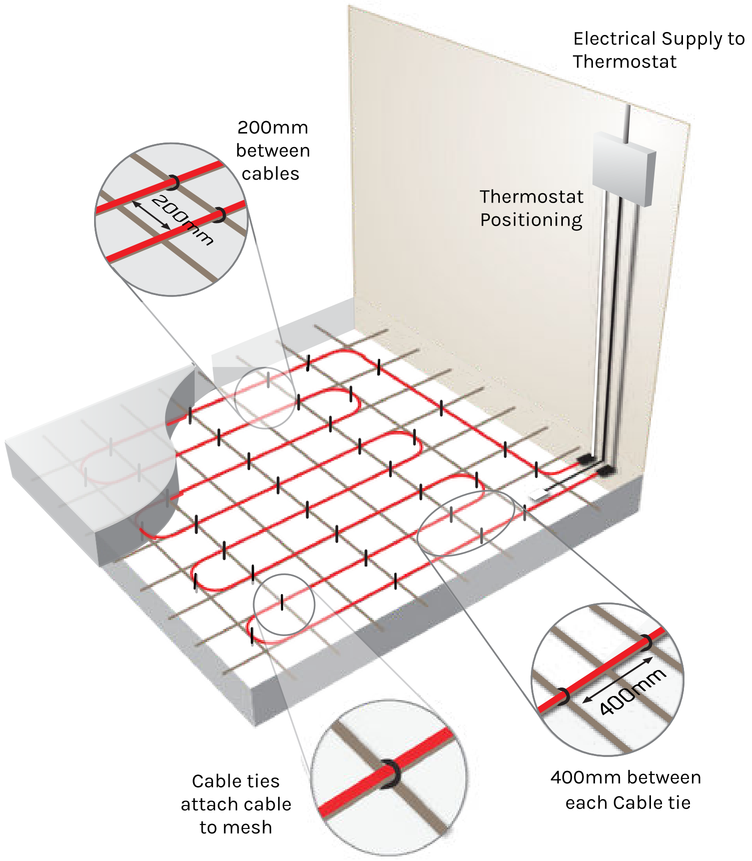
Divide the available floor area by the length of the heating cable, and multiply by 1,000.

Available Floor Area [.] m^2

——————— ×1000 = [ ] mm

Cable Length [.] m   Cable Spacing

Repeat the calculation to confirm. The heating cable should be spaced attach cable on average 200mm apart. Any significant variance should be discussed to with Livella.



Fix the Cable to the Reinforcing Mesh

Unroll one of the cold leads and secure it directly below the provision for the thermostat. Attach the heating cable to the reinforcing mesh using cable ties in such a way so as not to damage the cable sheath. Secure the heating cable at 400mm intervals along each run of the cable. Finally return the second cold lead to the starting position.

Positioning the Cold Leads & Sensor

Position the floor temperature sensor at the same depth as the heating cables between two cable runs and at least 150mm from the wall. Then, pull the cold leads and sensor into the conduit leaving the terminations within the area to be concreted.

Note: The sensor should be installed in a conduit with no more than one gentle bend from floor level to the thermostat.

Tariff Description	Typical Loadings W/m2
Off-Peak (Up to 12 hours)	180 – 200 Maximum 250
Extended Off-Peak (12+ hours)	160 – 200 Maximum 200
Snow Melting	200 – 250 Maximum 300

Refer Overleaf For Further Information

In–Slab Sizing Guide

MODEL	COVERAGE	RESISTANCE	LENGTH
IS0295	1.7m2	179.3Ω	9.83m
IS0495	2.8m2	106.9Ω	16.5m
IS0680	3.9m2	77.8Ω	22.0m
IS0735	4.2m2	72.0Ω	24.5m
IS0900	5.1m2	58.8Ω	30.0m
IS1260	7.2m2	42.0Ω	42.0m
IS1580	9.0m2	33.5Ω	52.6m
IS1820	10.4m2	29.1Ω	60.6m
IS2030	11.6m2	26.1Ω	67.6m
IS2320	13.3m2	22.8Ω	77.3m
IS2760	15.8m2	19.2Ω	92.0m
IS2950	16.9m2	17.9Ω	98.3m
IS3540	20.2m2	14.9Ω	118.0m
IS4225	24.1m2	12.5Ω	140.8m
IS5620	32.1m2	9.4Ω	187.3m

Technical Specifications

Maximum Voltage	230-240V	**Cold Lead Length**	3m
Cable & Lead Diameter	8mm	Woven Copper Earth Screen	
PVC Outer Insulation (105°C)		HDPE Primary Insulation (IPX7)	

IEC20/938/CDV 2008-04-04 (Project Number IEC60800 ED. 3.0), IEC60800 Second Edition 1992-04, IEC61423-1 First Edition 1995-06 Compliant

Installation Checklist

Livella's in slab heating cable is intended for installation in concrete only and is used for, off peak or background heat and can also be used for ice/snow melting. Installation of this heating system is simple and straightforward. However, it is important that you adhere to the instructions in this guide as well as to any current building and electrical regulations that may apply.

Take Photos

Sufficient photographs of the installation must be taken to ensure adequate illustration of heating cable runs, cold lead runs, temperature sensor, sensor conduit, active and neutral terminations locations. If the outer insulation has been punctured and repaired that the repair location has been noted and marked for future reference. A copy should remain with the installation for the benefit of future owners. This can be used to locate the heating cables for any future work or for later modifications to the dwelling's layout.

Electrical Regulations

In certain Australian states the installation of a floor heating system constitute prescribed electrical work and must be performed by a qualified tradesperson. In New Zealand, floor heating systems can be installed by any competent person. However, connection of the thermostat must be performed by a licensed electrician.

Electrical Preparation

All floor heating systems must be connected to an RCD protected circuit. If the loading of the heater cable exceeds the rating of the thermostat, provision for contactors should be made in a wall box behind the thermostat or 300mm above floor level.

Cable Fixing

Do not cut, join or shorten the heating cable at any time. If necessary, contact the customer care team for instructions. The 3m cold leads can be shortened at any time. Adhere strictly to the calculated cable spacing. The heater cable should at no time cross, be laid within 50mm of another run, with a twist, kink or bending diameter less than 42mm. Heater cables must not be laid where structures are to be installed above the finished floor or where the floor would be penetrated by nails or similar fixings.

Cold Leads & Sensor

The temperature sensor lead must not cross over or under the heating cable. No part of the heating cable must enter the wall unless within a conduit.

Rough-in For Cold Lead Conduits

For the 'Cold Leads' two 20mm (minimum) empty conduits must be run from the top of the finished concrete to switch or thermostat position. If more than one heating element is required per zone, two separate empty 20mm conduits should be provided for each additional element in the area that the element is located.

Rough-in For Slab Sensor Probe Conduits

Two 10mm diameter conduits should be run for two temperature sensors for each thermostat, from the thermostat connection point to in between two cable runs.

Protect the Cables

Take care when working over the heating cable. Do not rest heavy objects directly on the cable and avoid all unnecessary foot traffic. The heating cable is to be kept clear of any thermal insulation and clear of the upper floor surfaces by at least 35 - 75mm.

Electrical Connection

Connection of heating cables to power is considered prescribed electrical work and should be performed by an appropriately qualified tradesperson. Livella underfloor heating cables are quality checked prior to leaving the factory ensuring there is no breakdown in insulation resistance or faulty terminations. Measure the resistance of each heating element and compare with the anticipated resistance in the Model Guide before, during and after the concrete pour. While concrete is being laid, a 500V Insulation Tester should be used to monitor the cable insulation and a continuity check should be made to monitor for an open circuit.

Timber Floors

When in slab heating is installed under timber floors it is recommended that the temperature sensor be located directly under the timber floor coverings to ensure the heated floor does not reach a temperature higher than the timber manufacturer's specifications.

Warranty Application

A warranty application must be lodged within 30 days of installation. Contact Livella by phone, fax or email for additional copies or visit the website for more information. Terms and Conditions apply.

First-time Operation

The floor heating system must not be used until the concrete, floor coverings and adhesives are completely cured. Always refer to manufacturer's specifications. Always observe the floor covering manufacturer's operating temperature recommendations. After at least 8 weeks the heating system should be switched on for a few hours each day working up to the full load in 14 days.

⚠ Where cables can not be properly attached to the reinforcing mesh, light grade steel rods should be fastened to the reinforcing mesh to enable the support of the heating cable.

Livella prides itself on the excellent reputation build from 30 years in the industry helping our customers.

Expert Advice on 1800 833 933 (AU) or 0800 432 892 (NZ)
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