

SlabHeat Analysis Report

IMPORTANT!

It's the responsibility of the SlabHeat user to verify the slab heating design. SlabHeat calculates a temperature distribution only; it does not check the input data, the slab heating model, or the resulting output.

Project Name: **Холодильник** | -60
 Customer:
 Done By:
 Units: **Metric**

cooling chamber

DESIGN INFORMATION
Design Data

Heating Cable: Constant Wattage (20.0 W/m)
 Voltage: 220 V
 Installation: Embedded in Slab
 Heater Spacing: 500 mm
 Heater Depth: 350 mm
 Power Multiplier: 1.0
 Analysis Type: Fixed Heater Spacing (Steady State)

Upper Surface Boundary Condition

Boundary Condition: Indoors
 Ambient Temperature: -60.0 °C
 Heat Transfer Coefficient: 9.255 W/m²-°C

Lower Surface Boundary Condition

Boundary Condition: Indoors
 Ambient Temperature: 4.4 °C
 Heat Transfer Coefficient: 6.132 W/m²-°C

Slab Materials

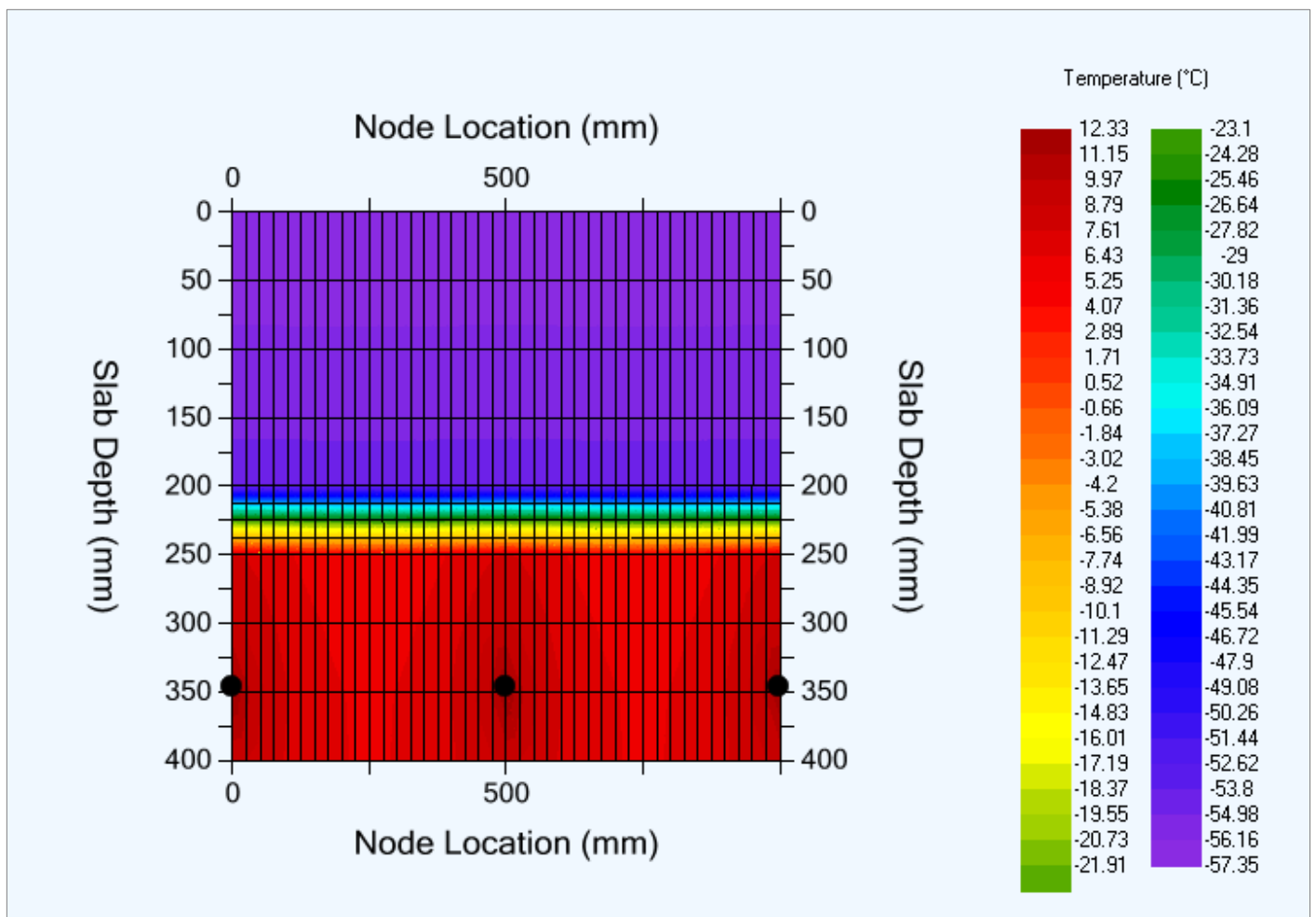
Material	Thickness (mm)	Layer Division	Conductivity (W/m-°C)	Density (kg/m ³)	Specific Heat (kJ/kg-°C)
Concrete	200	Auto	1.731	2306.592	0.837
Urethane foam board	50	Auto	0.020	33.638	1.047
Concrete	200	Auto	1.731	2306.592	0.837

cooling chamber

ANALYSIS SUMMARY

Heating Cable Power Output: **20.0 W/m** (Power Multiplier = 1.0)
Upper Surface Heat Flux: **24.6 W/m²**
Lower Surface Heat Flux: **15.4 W/m²**
Upper Surface Min. Temp.: **-57.3 °C**
Upper Surface Max. Temp.: **-57.3 °C**

SLAB TEMPERATURE DISTRIBUTION



• = Constant Wattage (20.0 W/m)

cooling chamber

Slab Temperature

Depth (mm)	Material	Node Location (0 to ½ of heater-spacing)										
		0000	0025	0050	0075	0100	0125	0150	0175	0200	0225	0250
		(Temperature, °C)										
0	Concrete	-57.3	-57.3	-57.3	-57.3	-57.3	-57.3	-57.3	-57.3	-57.3	-57.3	-57.3
50	Concrete	-56.6	-56.6	-56.6	-56.6	-56.6	-56.6	-56.6	-56.6	-56.6	-56.6	-56.6
100	Concrete	-55.9	-55.9	-55.9	-55.9	-55.9	-55.9	-55.9	-55.9	-55.9	-55.9	-55.9
150	Concrete	-55.2	-55.2	-55.2	-55.2	-55.2	-55.2	-55.2	-55.2	-55.2	-55.2	-55.2
200	Urethane foam board	-54.5	-54.5	-54.5	-54.5	-54.5	-54.5	-54.5	-54.5	-54.5	-54.5	-54.5
213	Urethane foam board	-39.0	-39.0	-39.1	-39.1	-39.2	-39.3	-39.4	-39.4	-39.5	-39.5	-39.5
225	Urethane foam board	-23.5	-23.5	-23.6	-23.8	-24.0	-24.1	-24.3	-24.4	-24.5	-24.5	-24.5
238	Urethane foam board	-07.9	-08.0	-08.2	-08.4	-08.7	-08.9	-09.1	-09.3	-09.4	-09.5	-09.5
250	Concrete	07.7	07.5	07.3	06.9	06.6	06.2	06.0	05.7	05.6	05.5	05.4
300	Concrete	08.9	08.6	08.1	07.7	07.2	06.9	06.6	06.3	06.2	06.1	06.0
350	Concrete	>> [12.3]	10.3	09.1	08.2	07.6	07.2	06.9	06.6	06.5	06.4	06.3
400	Concrete	09.0	08.8	08.3	07.9	07.5	07.1	06.8	06.6	06.5	06.4	06.4
450	Concrete	08.0	07.9	07.6	07.4	07.1	06.8	06.6	06.4	06.3	06.2	06.1

>> heating cable located at this node