

Thermoforming of ROHACELL®

ROHACELL® becomes thermo-deformable at temperatures between 165°C (329°F) and 230°C (446°F) (depending on grade, density, thickness and complexity of shape). Before thermoforming the sheets should be dried at 130°C (266°F) by using a heating cabinet with air circulation.

Drying process

- The process shall take place in an air circulation oven and each panel shall be separated from adjacent panels by not less than 25 mm to provide a constant airflow.
- All precautions regarding placement and accurate temperature control shall be strictly maintained.
- The ROHACELL® sheets can be heated in an oven, between heating plates or by infrared heaters if the thickness is less than 6 mm (1/4").
- The duration depends on the sheet thickness (approximately 1 mm/1 min).

Drying conditions

Thickness (mm)	Thickness (inch)	Time
< 25	< 1	4 hours
25 to 50	1 to 2	6 hours
50 to 75	2 to 3	8 hours
75 to 100	3 to 4	10 hours
> 100	> 4	12 hours

Thermoforming

- Since the heat capacity of the foam is low because of its small mass, the sheets surface cools rapidly because of the multitude of cut cells which act as "cooling vanes".
- The ROHACELL® sheets must be protected against cooling while they are moved from the heating cabinet or the heating plates to the forming device.
- The covering of the sheet can be cotton cloth, breather, glass fabric or silicone rubber.
- The cover is intended to keep the sheets just long enough at the necessary forming temperature until forming is finished.
- The design of the forming molds can be simple when the degree of forming is small.

- Due to the low heat capacity of ROHACELL® the molds are not subjected to a substantial amount of heat. Therefore wood, polyester or epoxy resin molds are adequate.
- The forming of the part can be achieved by vacuum or non-vacuum diaphragm using female/male molds or matched molds.
- In order to ensure that the ROHACELL® sheet can be drawn into the mold without much resistance, the edges should have large radii.
- The foam cools quickly. A uniform cooling from both sides is recommended to avoid spring back.
- Once the formed part has cooled down to 80°C (176°F), it may be removed from the tool.

Thermoforming temperature guidelines

ROHACELL® IG and ROHACELL® A

Thermoforming temperatures for ROHACELL® IG and ROHACELL® A

Temperature	Unit	ROHACELL® 31 IG/ A	ROHACELL® 51 IG/A	ROHACELL® 71 IG/A	ROHACELL® 110 IG/A
*± 3°C	°C	190	180	175	165
*± 5°F	°F	374	356	347	329

The data of this table are representative values, but not to be used to establish specifications

ROHACELL® IG-F

Thermoforming temperatures for ROHACELL® IG-F

Temperature	Unit	ROHACELL® 31 IG-F	ROHACELL® 51 IG-F	ROHACELL® 71 IG-F	ROHACELL® 110 IG-F
*± 3°C	°C	203	183	178	168
*± 5°F	°F	397	361	352	334

The data of this table are representative values, but not to be used to establish specifications

ROHACELL® WF

Thermoforming temperatures for ROHACELL® WF

Temperature	Unit	ROHACELL® 51WF	ROHACELL® 71 WF	ROHACELL® 110 WF	ROHACELL® 200 WF
*± 3°C	°C	208	210	210	205
*± 5°F	°F	406	410	410	401

The data of this table are representative values, but not to be used to establish specifications

ROHACELL® WF-HT

Thermoforming temperatures for ROHACELL® WF-HT

Temperature	Unit	ROHACELL® 51WF-HT	ROHACELL® 71 WF-HT	ROHACELL® 110 WF-HT	ROHACELL® 200 WF-HT
*± 3°C	°C	213	215	215	210
*± 5°F	°F	415	419	419	410

The data of this table are representative values, but not to be used to establish specifications

ROHACELL® RIST

Thermoforming temperatures for ROHACELL® RIST

Temperature	Unit	ROHACELL® 51 RIST	ROHACELL® 71 RIST	ROHACELL® 110 RIST
*± 3°C	°C	205	200	190
*± 5°F	°F	401	392	374

The data of this table are representative values, but not to be used to establish specifications

ROHACELL® RIST-HT

Thermoforming temperatures for ROHACELL® RIST-HT

Temperature	Unit	ROHACELL® 51 RIST-HT	ROHACELL® 71 RIST-HT	ROHACELL® 110 RIST-HT
*± 3°C	°C	210	205	195
*± 5°F	°F	410	401	383

The data of this table are representative values, but not to be used to establish specifications

ROHACELL® RIMA

Thermoforming temperatures for ROHACELL® RIMA

Temperature	Unit	ROHACELL® 51 RIMA	ROHACELL® 71 RIMA	ROHACELL® 110 RIMA
*± 3°C	°C	215	205	195
*± 5°F	°F	419	401	383

The data of this table are representative values, but not to be used to establish specifications

ROHACELL® RIMA-HT

Thermoforming temperatures for ROHACELL® RIMA-HT

Temperature	Unit	ROHACELL® 51 RIMA-HT	ROHACELL® 71 RIMA-HT	ROHACELL® 110 RIMA-HT
*± 3°C	°C	220	210	200
*± 5°F	°F	428	410	392

The data of this table are representative values, but not to be used to establish specifications

ROHACELL® XT

Thermoforming temperatures for ROHACELL® XT

Temperature	Unit	ROHACELL® 71 XT	ROHACELL® 110 XT
*± 3°C	°C	225	215
*± 5°F	°F	437	419

The data of this table are representative values, but not to be used to establish specifications

ROHACELL® XT-HT

Thermoforming temperatures for ROHACELL® XT-HT

Temperature	Unit	ROHACELL® 71 XT-HT	ROHACELL® 110 XT-HT
*± 3°C	°C	230	220
*± 5°F	°F	446	428

The data of this table are representative values, but not to be used to establish specifications

ROHACELL® S

Thermoforming temperatures for ROHACELL® S

Temperature	Unit	ROHACELL® 51 S	ROHACELL® 71 S	ROHACELL® 110 S
*± 3°C	°C	215	210	200
*± 5°F	°F	419	410	392

The data of this table are representative values, but not to be used to establish specifications

ROHACELL® HF

Thermoforming temperatures for ROHACELL® HF

Temperature	Unit	ROHACELL® 31 HF	ROHACELL® 51 HF	ROHACELL® 71 HF
*± 3°C	°C	215	205	195
*± 5°F	°F	419	401	383

The data of this table are representative values, but not to be used to establish specifications

For further information, please contact our experts by phone +49 6151 18 1005 or e-mail rohacell@evonik.com.

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