

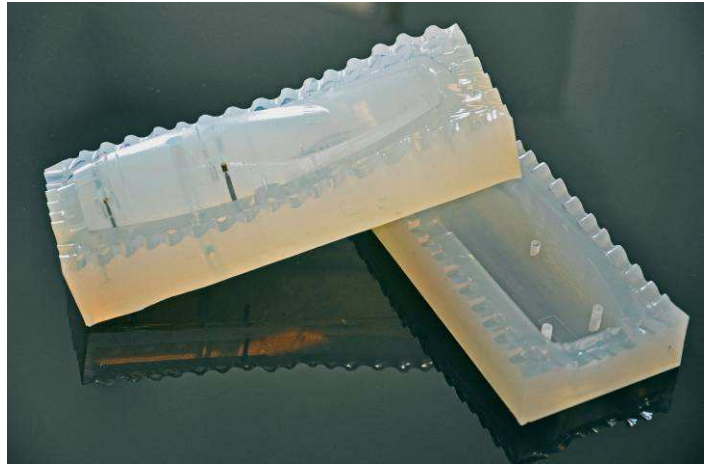
All about mould making

UNIQUE IDEAS. UNIQUE SOLUTIONS



Rapid prototyping

Rapid prototyping is a method which already allows the quick, inexpensive and simple manufacturing of prototypes and models with all details in the planning phase. For achieving the desired properties the master models are mostly casted in the stereolithography process with the CHT silicones **KÖRAFORM A 41** or **KÖRAFORM A 42** and cut up along the mould parting line after curing. The non-adhesive and mechanically excellent properties of the highly transparent **KÖRAFORM A 41** and **KÖRAFORM A 42** towards the reproduction materials in use allow the production of high piece numbers. We also recommend our ALPA-SIL TRANS ÖLEND for a better release of the models.



Model and mould making



In model and mould making silicone forms are mostly produced with the CHT silicone **KÖRAFORM K 31**. The second cast technique to be applied is basically determined by the geometry and the size of the object. However, the time factor also plays a decisive role for the selection of the second cast technique. We generally recommend the skin mould for objects with a complex geometry and strong undercuts. The second cast technique is more and more effected by painting due to the increasing size of the object. For simple geometric shapes with shallow undercuts the solid mould is most suitable but it is restricted to small and medium-sized models.

KÖRAFORM two component RTV silicones for model and mould making

KÖRAFORM		Colour		Density ¹⁾ [g/cm] (DIN 53 479)		Viscosity ¹⁾ [mPas]		Mixing ratio (parts by weight)	Potlife ¹⁾ min]	Curing time ¹⁾ [h]
Comp. A	Comp. B	Comp. A	Comp. B	Comp. A	Comp. B	Comp. A	Comp. B	A : B		
A 28	A 28 B	transparent	transparent	1.08	0.98	29000	1000	10 : 1	90	16
A 40	A 40 B	transparent	transparent	1.08	1.08	40000	40000	1 : 1	90	10
A 41	A 41 WB	transparent	transparent	1.09	0.98	67000	300	10 : 1	60	12
A 42	A 42 B/WB	transparent	transparent	1.09	0.98	62000	650/6000	10 : 1	90	12
K 18	B 132	white	colourless	1.09	1.04	25000	20	100 : 2	100	18
K 20	B 128	translucent	colourless	1.13	1.04	stable	20	100 : 5	30	24
K 31	B 128	white	colourless	1.22	1.04	25000	20	100 : 2	60	20
K 40	B 132	white	colourless	1.16	1.04	6000	20	100 : 2	100	12

KÖRAFORM		Hardness shore A ²⁾ (DIN 53 505)	Tensile strength ²⁾ (DIN 53 504, S 3 A)	Elongation at break ²⁾ (DIN 53 504, S 3 A)	Resistance to further tearing ²⁾ (ASTM D 624 form B)	Linear shrinkage ¹⁾ (after 7 days)	Colour of the vulcanizate	Application field
Comp. A	Comp. B	–	[N/ mm ²]	[%]	[N/ mm]	[%]	–	–
A 28	A 28 B	28	5.6	500	22	0.1	transparent	model and mould making
A 40	A 40 B	40	5.8	380	20	0.1	transparent	rapid prototyping, jewellery industry
A 41	A 41 WB	38	5.0	420	17	0.1	transparent	rapid prototyping, model and mould making
A 42	A 42B/WB	42/40	6/5.5	330/360	20/25	0.1	transparent	rapid prototyping
K 18	B 132	18	3.5	350	17	0.5	white	model and mould making
K 20	B 128	40	2.8	500	16	0.6	translucent	stucco (applicable with spatula)
K 31	B 128	23	2.8	380	22	0.5	white	model and mould making, pad printing
K 40	B 132	40	2.4	140	3	0.5	white	model and mould making

Status 03 / 2011

1) Measured under standard climate DIN 50 014-23/50-2

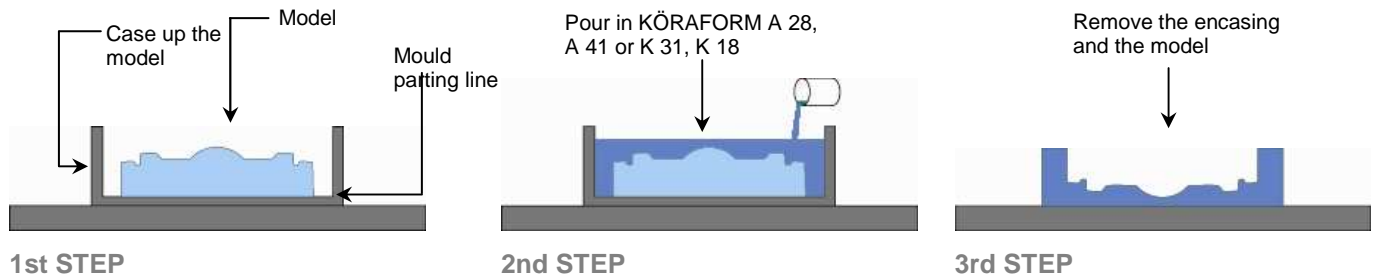
2) Vulcanizate, measured after 14 days of storage under standard climate DIN 50 014-23/50-2

Solid mould

This type of mould is recommended for moulds consisting of one or more parts without strong undercuts. The advantage of this process is the low time and work effort. However, the higher

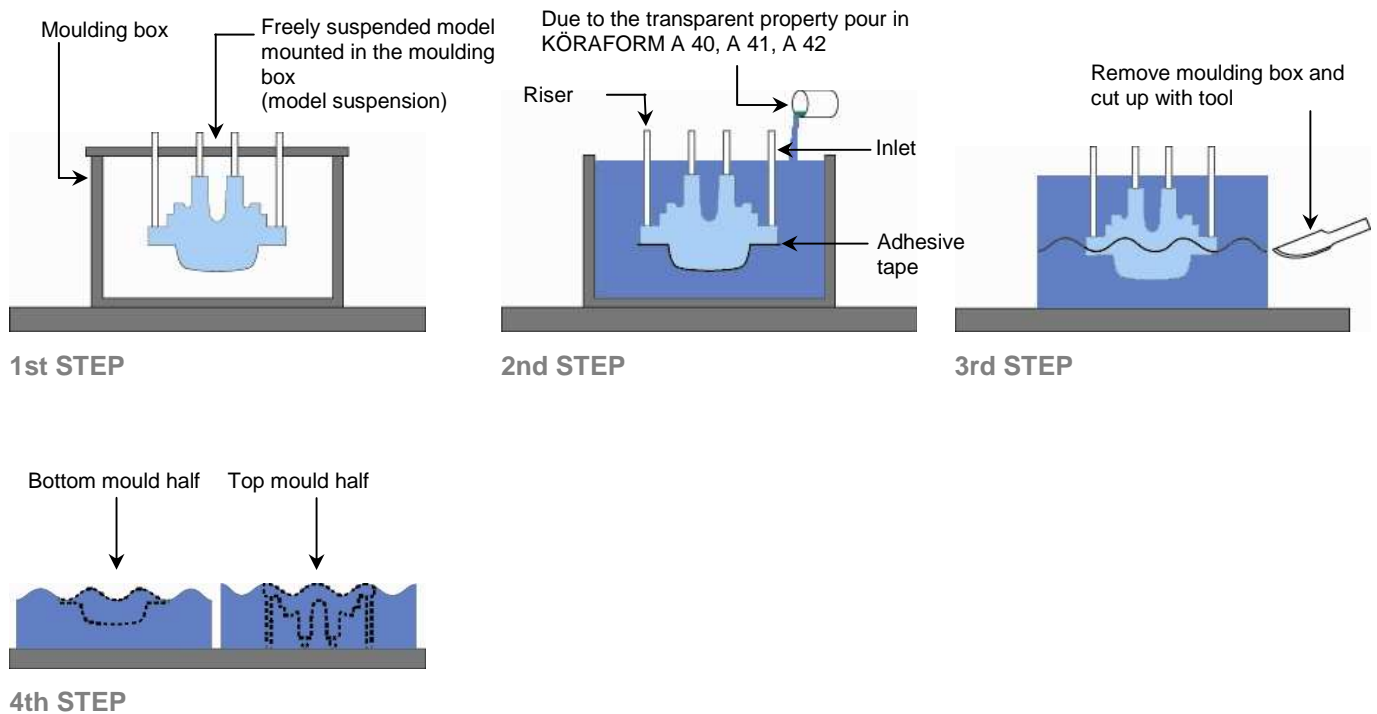
material consumption and elasticity loss must be observed. A detailed scheme of the different ways of effecting the solid mould are given below.

One part solid mould



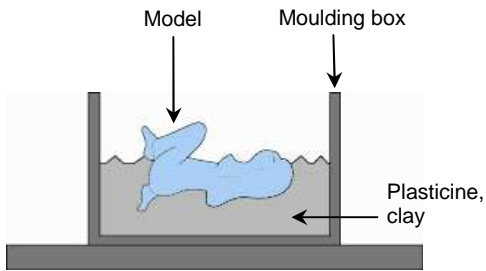
Two part solid mould (cut)

This process is suited for rapid prototyping.



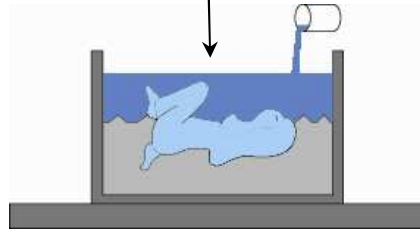
Two part solid mould (consisting of modules)

Pour KÖRAFORM A 28, A 40, A 41, A 42 or K 31, K 18 into the second mould half. Make sure to apply a release agent since silicones are not self-releasing on silicones.

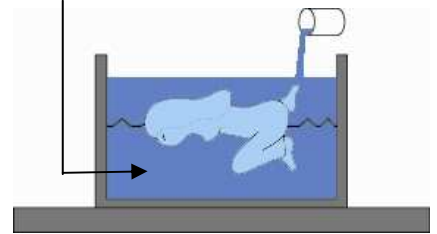


1st STEP

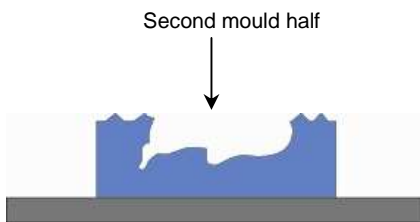
Pour KÖRAFORM A 28, A 40, A 41, A 42 or K 31, K 18 into the first mould half.



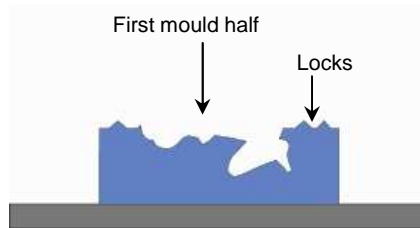
2nd STEP



3rd STEP



4th STEP



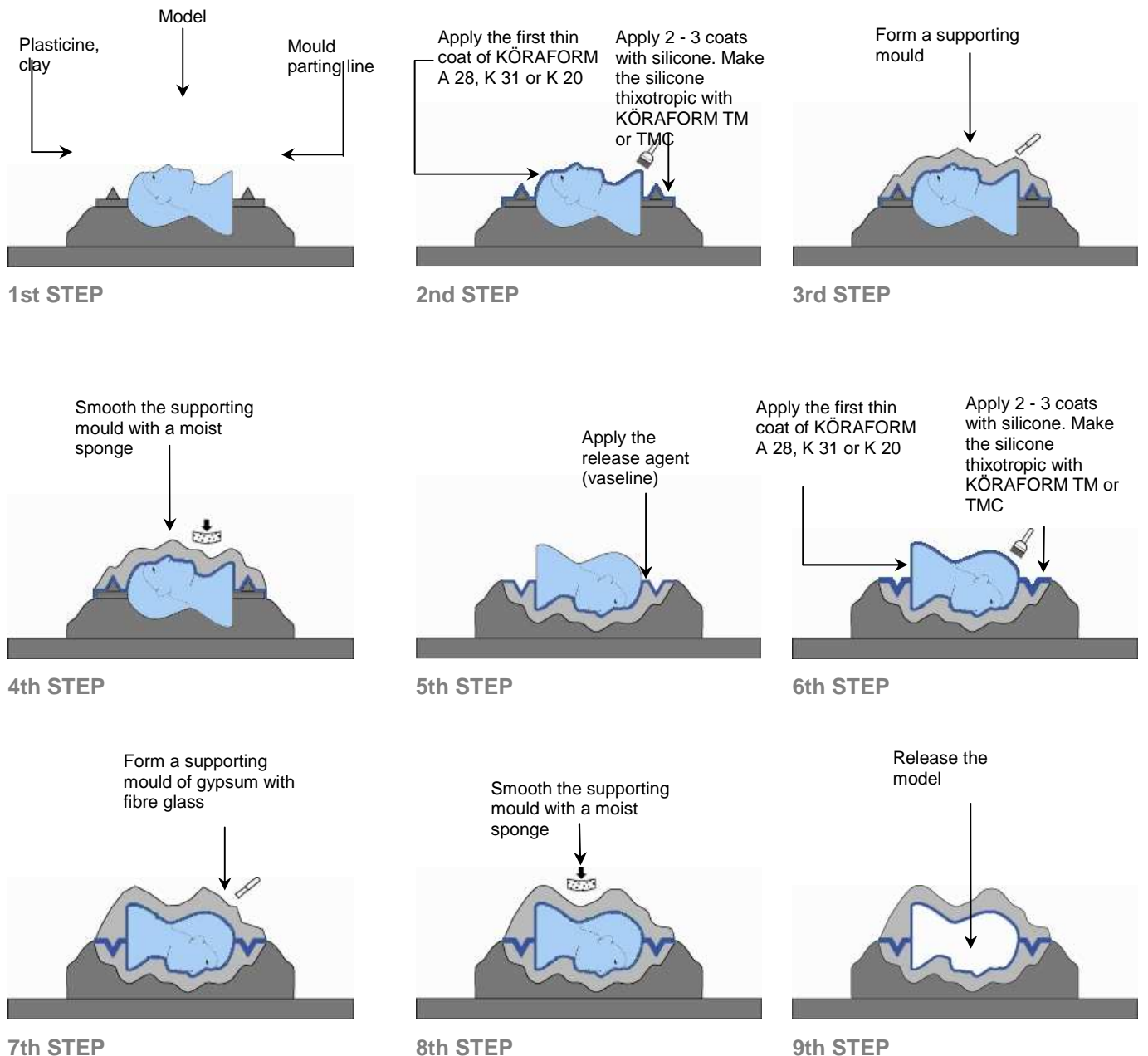
5th STEP

Skin mould

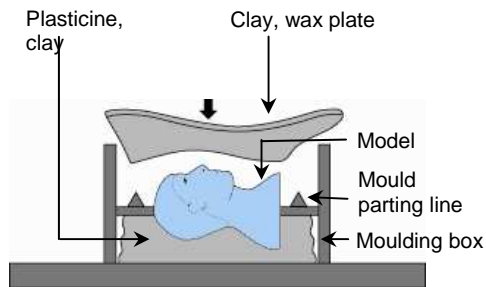
This process is suited for moulds with deep and strong undercuts of a model. This second cast technique stands out for a great flexibility and

low material efforts for manufacturing. A detailed description of the application is given below.

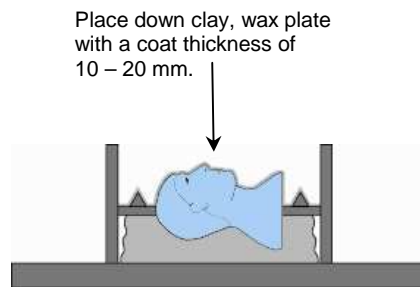
Two part skin mould (painting)



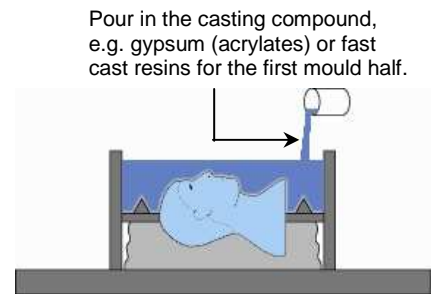
Two part skin mould (casting)



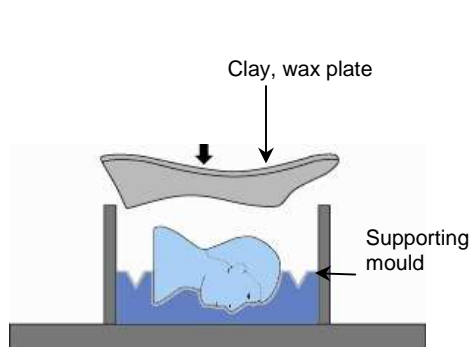
1st STEP



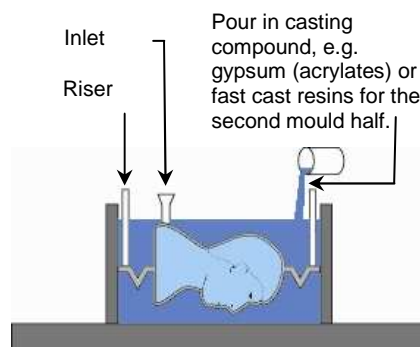
2nd STEP



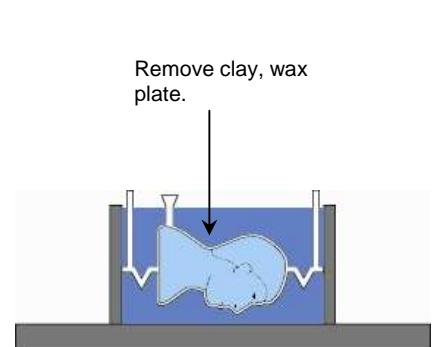
3rd STEP



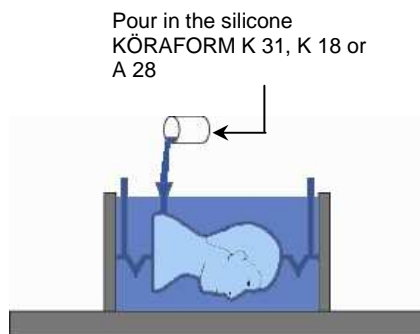
4th STEP



5th STEP



6th STEP



7th STEP

Version 07/2012



ISO 9001:2008
12 100 37346 TMS



Reg.-Nr. 01035/04



BEZEMA