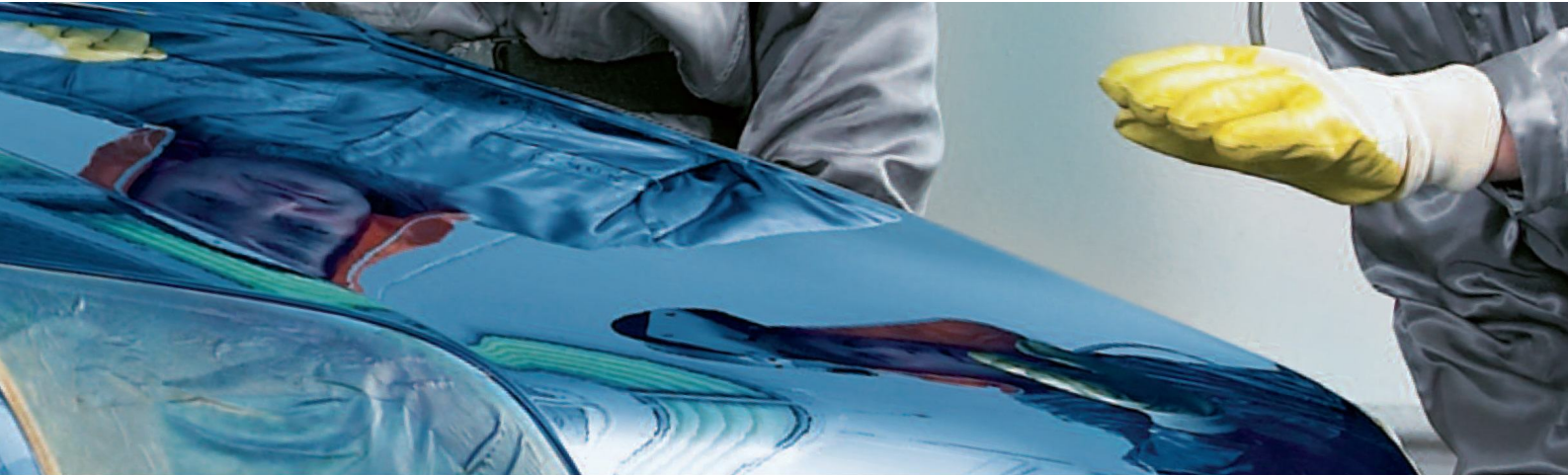
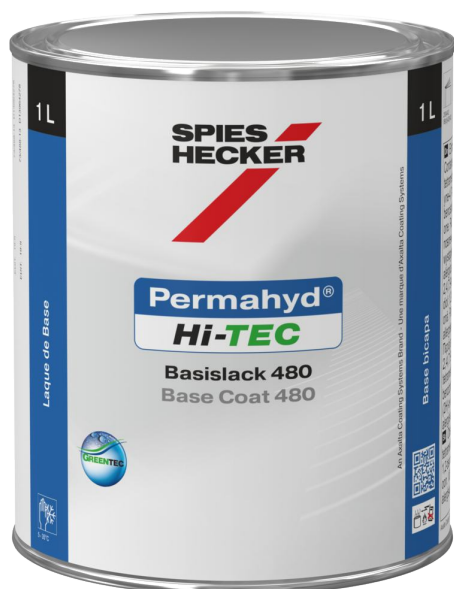




Technical Data Sheet.

Permahyd® Hi-TEC Base Coat 480



Permahyd Hi-TEC Base Coat 480 is an easy-to-use innovative waterborne base coat system that gives you the highest colour accuracy and optimal coating results, even for special colours and paint effects. It's the base coat for the most challenging car refinishing jobs.

- Excellent colour accuracy thanks to even effect formation.
- Short process times.
- Excellent hiding-power maximises paint efficiency.
- Easy and reliable blending-in process.
- Various application options (interior, multi-layer and multicolour car paint).

For professional use only!

Spies Hecker simply closer.



An Axalta Coating Systems Brand

Permahyd® Hi-TEC Base Coat 480

Product preparation - application for 2-stage colours



It is strongly recommended to use appropriate personal protection equipment during application to avoid respiratory, skin and eye irritation.



Old or original paintwork well sanded and cleaned.
Primer-surfacer or Surfacer, sanded and cleaned
Primer-Surfacer or Surfacer, unsanded in a wet-on-wet process
Surfaces must be prepared and cleaned correctly before application
Repair areas should be sanded with P500-P600 (by machine) or P800-P1000 (by hand) and cleaned



		Basecoat	Additive
		Permahyd Hi-TEC Base Coat 480	WT 6050 / 6052
Standard	Effect colours	100	20%
Standard	Solid colours	100	10%

Maximum 10% Permahyd Demineralised Water 6000 can be added in addition. Refer to Permahyd Hi-TEC Climate Poster.



For optimum application properties, apply the basecoat immediately after addition of Permahyd WT Additive 6050/6052. Use within same working day. Colours should be stored without the addition of the WT Additive.



	Spray nozzle	Spray pressure	
Compliant	1.2 - 1.3	1.8 - 2 bar	inlet pressure
HVLP	1.2 - 1.3	0.7 bar	atomisation pressure

see manufacturer's instructions



1 + 0.5
Apply a closed coat by wetting the surface sufficiently to achieve 70-80% opacity in the wet film.
This is followed by an effect coat with increased distance to the object with close overlaps into the still wet first layer.
This final ½ (>50%) effect coat achieves the correct effect orientation, completes the hiding and provides the correct colour position.

flash-off until matt



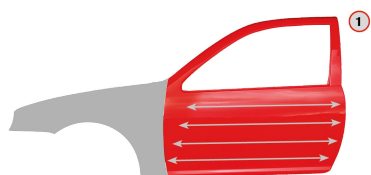
Clearcoat

VOC compliant

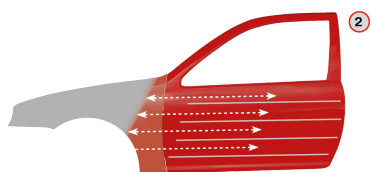
2004/42/IIIB(d)(420) 420: The EU limit value for this product (product category: IIB(d)) in ready to use form is maximum 420 g/l of VOC. The VOC content of this product in ready to use form is maximum 420 g/l.

Permahyd® Hi-TEC Base Coat 480

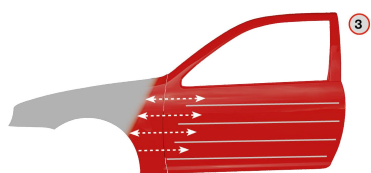
Blending system for 2-stage colours Standard



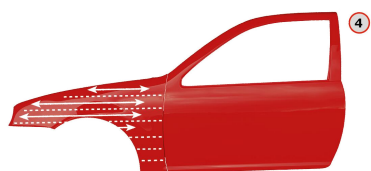
Begin by applying 1 - 2 closed coats of Permahyd Blend-in Additive 1050 / 1051* to the blending area. Ensure that the blending area is large enough. Do not allow Permahyd Blend-in Additive 1050 / 1051 to flash.**



Then, apply the first light coat of base coat from the blending area into the wet Permahyd Blend-in Additive 1050 / 1051. A diagonal blend helps produce the most undetectable repair.



Then, immediately apply another light coat without flash-off time. Ensure to start the coat within the previous one and extend it to the repair area to achieve an even effect formation.



After blending, apply 1.5 coats (standard process) to the transition area and the remaining area of the new part.



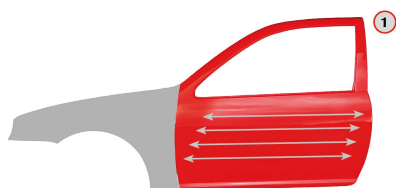
After flash-off, Permasolid HS Clear Coat is applied to the entire repair area.

* Permahyd Blend-in Additive 1051 is suitable for low relative air humidity (< 30%) and/or temperatures above 30°C.

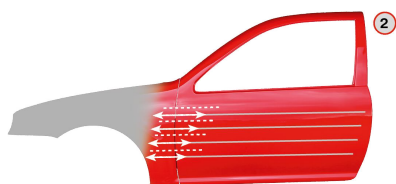
** Permahyd Blend-in Additive 1050/1051 is not recommended for dark colours.

Permahyd® Hi-TEC Base Coat 480

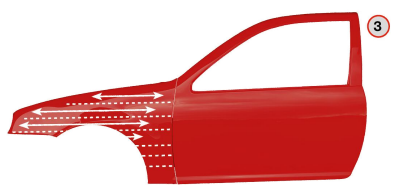
Blending system for 2-stage colours Optional



Begin by applying 1 - 2 closed coats of Permahyd Blend-in Additive 1050 / 1051* to the blending area. Ensure that the blending area is large enough. Do not allow Permahyd Blend-in Additive 1050 / 1051 to flash.**



Then, apply the first coat of base coat to the blending area starting from the new part to the edge of the wet Permahyd Blend-in Additive. Immediately continue with the effect / finish coat, which is sprayed with increased distance to the object into the wet Permahyd Blend-in Additive and towards the new part.*** A diagonal blend helps produce the most undetectable repair.



After blending, apply 1.5 coats to the remaining area (standard application).



After flash-off, Permasolid HS Clear Coat is applied to the entire repair area.

* Permahyd Blend-in Additive 1051 is suitable for low relative air humidity (< 30%) and/or temperatures above 30°C.

** Permahyd Blend-in Additive 1050/1051 is not recommended for dark colours.

*** We recommend that all coats, starting with the first coat, are applied from the furthest blending area to the repair area and that all subsequent coats remain within the previous coat to achieve an even effect formation.

Permahyd® Hi-TEC Base Coat 480

Product preparation - application for 3-stage colours



It is strongly recommended to use appropriate personal protection equipment during application to avoid respiratory, skin and eye irritation.



Old or original paintwork well sanded and cleaned.
Primer-surfacer or Surfacer, sanded and cleaned
Surfaces must be prepared and cleaned correctly before application
Repair areas should be sanded with P500-P600 (by machine) or P800-P1000 (by hand) and cleaned



		Basecoat	Hardener	Additive
		Permahyd Hi-TEC Base Coat 480	3080	WT 6050 - 6052
Standard	Effect colours	100		20%
2K Hardened	Effect colours	100	5%	20%
Standard	Solid colours	100		10%
2K Hardened	Solid colours	100	5%	10%
Ground coat	Blend-in Additive 1050 / 1051	100	5%	-

All amounts are cumulative.

Maximum 10% Permahyd Demineralised Water 6000 can be added in addition. Refer to Permahyd Hi-TEC Climate Poster.



For optimum application properties, apply the basecoat immediately after addition of Permahyd Hardener 3080 and Permahyd WT Additive 6050/6052.
Solid ground colours - 5%: 1 hr 30 min - 2 hr
Effect ground colours - 5%: 45 min - 1 hr
Blender - 5%: 1 hr - 1 hr 30 min



	Spray nozzle	Spray pressure	
Compliant	1.2 - 1.3	1.8 - 2 bar	inlet pressure
HVLP	1.2 - 1.3	0.7 bar	atomisation pressure

see manufacturer's instructions



1.5 - 2 Ground coats (2K Hardened) flash-off until matt
1 + 0.5 Effect/midcoat flash-off until matt



	Bake	Blowing	Ambient
20 °C	-	-	15 min - 25 min
35 - 40 °C	-	8 min - 12 min	-
60 - 65 °C	10 min - 15 min	-	-



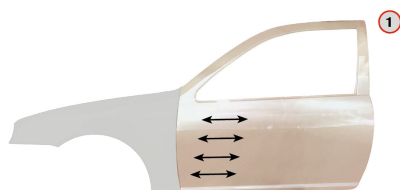
Clearcoat

VOC compliant

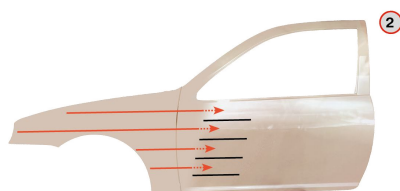
2004/42/IIB(d)(420) 420: The EU limit value for this product (product category: IIB(d)) in ready to use form is maximum 420 g/l of VOC. The VOC content of this product in ready to use form is maximum 420 g/l.

Permahyd® Hi-TEC Base Coat 480

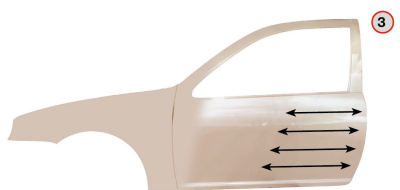
Blending system for 3-stage effect colours



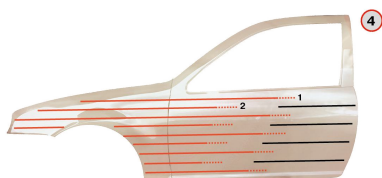
Mix Permahyd Blend-in Additive 1050 / 1051* with Permahyd Hardener 3080. Apply a closed coat of Permahyd Blend-in Additive 1050 / 1051 to the blending area, avoiding the extreme edges of the panel. Refer to mixing details page for product adjustment and mixing ratios.



Adjust the ground colour with Permahyd Hardener 3080 add WT Additive. Apply to the repair area and to the adjacent blending area until it forms an opaque film. The fade-out should be within the wet Permahyd Blend-in Additive 1050 / 1051. Flash off and dry.



After the surface has flashed-off until matt, apply a closed coat of pure Permahyd Blend-in Additive 1050 / 1051 (without hardener) to the blending area.



The effect colour is applied from the fade-out to the new part (outside-in). Then if necessary, the next effect colour coats should be applied inside the previous layer towards the new part wet on wet.



After flash-off, Permasolid HS Clear Coat is applied to the entire repair area.

Permahyd Blend-in Additive 1051 is suitable for low relative air humidity (< 30%) and/or temperatures above 30°C.

Permahyd® Hi-TEC Base Coat 480

Product preparation - application Super High effect Aluminium colours (containing WT 305)



It is strongly recommended to use appropriate personal protection equipment during application to avoid respiratory, skin and eye irritation.



Suitable substrates, undercoats and its preparation can be found in previous pages in this TDS.

- Apply a single layer of 2K Clearcoat on all repaired panels / surfaces

- After drying and cooling, sand the whole panel very carefully with:

- machine sanding: P1000 – P1200 grade
- hand sanding for edges and corners: P3000 grade

- For blend-in process, please refer to blend-in page for 2 stage colours



		Basecoat	Additive
		Permahyd Hi-TEC Base Coat 480	WT6050 / 6052
Standard	Effect colours	100	50%



For optimum application properties, apply the basecoat immediately after addition of Permahyd WT Additive 6050/6052. Use within same working day. Colours should be stored without the addition of the WT Additive.



	Spray nozzle	Spray pressure	
Compliant	1.2 - 1.3	1.8 - 2 bar	inlet pressure
HVLP	1.2 - 1.3	0.7 bar	atomisation pressure

see manufacturer's instructions



1 + 0.5

flash-off until matt

Apply a closed coat by wetting the surface sufficiently to achieve 70-80% opacity in the wet film. This is followed by an effect coat with increased distance to the object with close overlaps into the still wet first layer. This final ½ (>50%) effect coat achieves the correct effect orientation, completes the hiding and provides the correct colour position.



Clearcoat
Check if a specific clearcoat is required to meet car manufacturer approvals.

VOC compliant

2004/42/II(d)(420) 420: The EU limit value for this product (product category: IIB(d)) in ready to use form is maximum 420 g/l of VOC. The VOC content of this product in ready to use form is maximum 420 g/l.

Permahyd® Hi-TEC Base Coat 480

Product preparation - application with Permahyd Hardener 3080



It is strongly recommended to use appropriate personal protection equipment during application to avoid respiratory, skin and eye irritation.



Old or original paintwork well sanded and cleaned.
Primer-surfacer or Surfacer, sanded and cleaned
Primer-Surfacer or Surfacer, unsanded in a wet-on-wet process
Surfaces must be prepared and cleaned correctly before application
Repair areas should be sanded with P500-P600 (by machine) or P800-P1000 (by hand) and cleaned



		Basecoat	Hardener	Additive
		Permahyd Hi-TEC Base Coat 480	3080	WT 6050 / 6052
Permasolid HS Speed Clear Coat 8810	Effect colours	100	5%	20%
Permasolid HS Speed Clear Coat 8810	Solid colours	100	5%	10%
Permasolid HS Speed Clear Coat 8810	Blend-in Additive 1050 / 1051	100	5%	-
Underhood / interior	Solid colours	100	10%	10%
Underhood / interior	Effect colours	100	10%	20%

Permahyd Hi-TEC Base Coat 480 has the ability to be hardened with Permahyd Hardener 3080 for use in multi-toning, 3-stage ground colors, underhood/interiors and for general application where the basecoat requires to be hardened. The table illustrates the main details, this can also be found in Phoenix software when preparing the colour ready for use. Permahyd Demineralised Water 6000 can be added for application in lower humidity and warmer climates.

All amounts are cumulative.

Maximum 10% Permahyd Demineralised Water 6000 can be added in addition. Refer to Permahyd Hi-TEC Climate Poster.

For use of 3-stage colours under 8810 both Ground coat & effect coat need to be activated according the above specifications.

For multi-toning every layer but the last one needs to be activated, except for use under 8810 all layers need to be activated.

When using 8810, the Basecoat blender needs to be activated according the above specifications.



For optimum application properties, apply the basecoat immediately after addition of Permahyd Hardener 3080 and Permahyd WT Additive 6050/6052.
Solid colours: 5%: 1 hr 30 min - 2 hr
Solid colours: 10%: 45 min - 1 hr
Effect colours: 5%: 45 min - 1 hr
Effect colours: 10%: 30 min - 1 hr
Blender - 5%: 1 hr - 1 hr 30 min



	Spray nozzle	Spray pressure	
Compliant	1.2 - 1.3	1.8 - 2 bar	inlet pressure
HVLP	1.2 - 1.3	0.7 bar	atomisation pressure

see manufacturer's instructions



1 + 0.5
1 operation
1st: closed uniform coat
2nd: apply immediately an effect coat using an increased distance to the object

flash-off until flat
before clearcoating



	Interior 10% hardener	8810 5% ambient/bake	8810 5% blowing
20 °C	12 hr - 16 hr	15 min - 25 min	-
35 - 40 °C	-	-	8 min - 12 min
60 - 65 °C	15 min - 20 min	10 min - 15 min	-



Clearcoat
Clearcoat not needed for interior use

VOC compliant

2004/42/IIIB(d)(420) 420: The EU limit value for this product (product category: IIB(d)) in ready to use form is maximum 420 g/l of VOC. The VOC content of this product in ready to use form is maximum 420 g/l.

Permahyd® Hi-TEC Base Coat 480

Product preparation - application Special Colours using Permahyd Hi-TEC Effect Control 6054



It is strongly recommended to use appropriate personal protection equipment during application to avoid respiratory, skin and eye irritation.



Old or original paintwork well sanded and cleaned.
Primer-surfacer or Surfacers, sanded and cleaned
Surfaces must be prepared and cleaned correctly before application
Repair areas should be sanded with P500-P600 (by machine) or P800-P1000 (by hand) and cleaned



		Basecoat	Hardener 3080	WT Additive 6050/6052	Effect Control 6054
Special Colours	Effect Colours	100			300%*
Ground Colour	Effect Colours	100	5%**	20%	
Ground Colour	Solid Colours	100	5%**	10%	
Blender	1050/1051	100	5%**		

*please refer to the "ready-for-use" function in Phoenix to select the appropriate "Special Colour" product adjustment of the Permahyd Hi-TEC Base Coat Colour in use.

All amounts are cumulative.

**limited potlife, please refer to page "application with Permahyd Hi-TEC Hardener 3080".

When Effect Control 6054 is added to the Special Colour, thoroughly stirring is required before every usage within the recommended potlife of 3 days/72 hours.



Special Colours mixed with 300% 6054: 3 days



	Spray nozzle	Spray pressure	
Compliant	1.2 - 1.3	1.8 - 2 bar	inlet pressure
HVLP	1.2 - 1.3	0.7 bar	atomisation pressure

see manufacturer's instructions



1.5 - 2 Ground coats (2K Hardened)

flash-off until matt Forced drying recommended

3 - 5 Mist coats (Special Colour) 1.: Restrict the fluid flow on the spray gun using the material adjustment valve by opening 1.5-2.5 turns* from fully closed. Settings are dependent on different spray gun manufacturers (e.g. SATA RP1.2 = open material delivery by 1.5 turns from closed**). 2.: Apply 3-5 mist coats with 30-35 cm distance to the object. Do not apply closed or wet coats. Too wet application might lead to patchiness and mottling. Use tack cloth between coats. Verify spray pattern prior to application. *In drier conditions (<30% relative humidity) more fluid flow may be required. **Alternatively a 1.1 fluid tip with fully opened fluid flow may be used if applicable

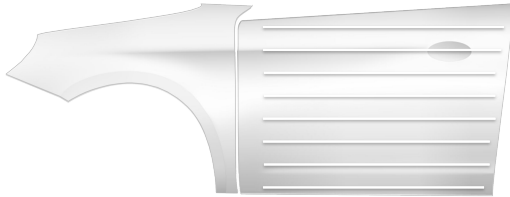
flash-off until matt blow dry between coats

VOC compliant

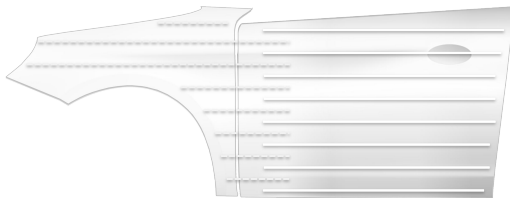
This product mix is not VOC compliant.

Permahyd® Hi-TEC Base Coat 480

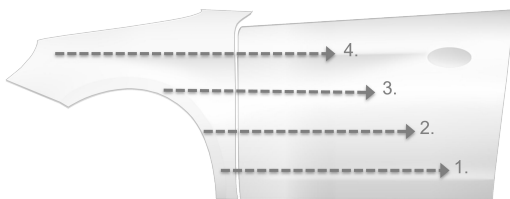
Blending system for Special Colours using Permahyd Hi-TEC Effect Control 6054



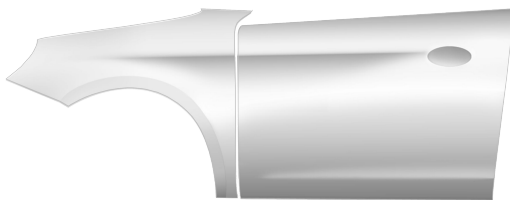
Apply a closed coat of hardened Permahyd Hi-TEC Blend-in Additive 1050/1051 (blender +5% Permahyd Hi-TEC Hardener 3080) to the adjacent blending area (panel). Do not fade out the blender and apply up to the edge of the panel.



Apply the hardened Permahyd Hi-TEC ground colour in 1.5 coats over the repair area (repair panel) into the still wet Permahyd Hi-TEC Blend-in Additive. When using white solid colours, reduced fluid flow (material delivery) and fading in towards the repair area will help to avoid the formation of heavy droplets. For appropriate product adjustment, please refer to Phoenix "ready-for-use" information of the colour in use. Flash off and dry (forced drying is recommended - do not use hand blowers at this stage).



Allow panel to cool down completely. Adjust the Special Colour according to the "ready-for-use" information given in Phoenix for the Special Colour in use. 1.: Restrict the fluid flow on the spray gun using the material adjustment valve by opening 1.5-2.5 turns from fully closed. Settings are dependent on different spray gun manufacturers (e.g. SATA RP1.2 = open material delivery by 1.5 turns from closed). 2.: Apply the first mist coat to the widest area and flash off. Apply subsequent coats using an out-side-in technique. Flash off between coats. Ensure a distance to the object of approx. 30-35 cm. Do not apply closed or wet coats. Too wet application might lead to patchiness and mottling. Use tack cloth between coats. 3.: Finally flash off in readiness for clearcoat.



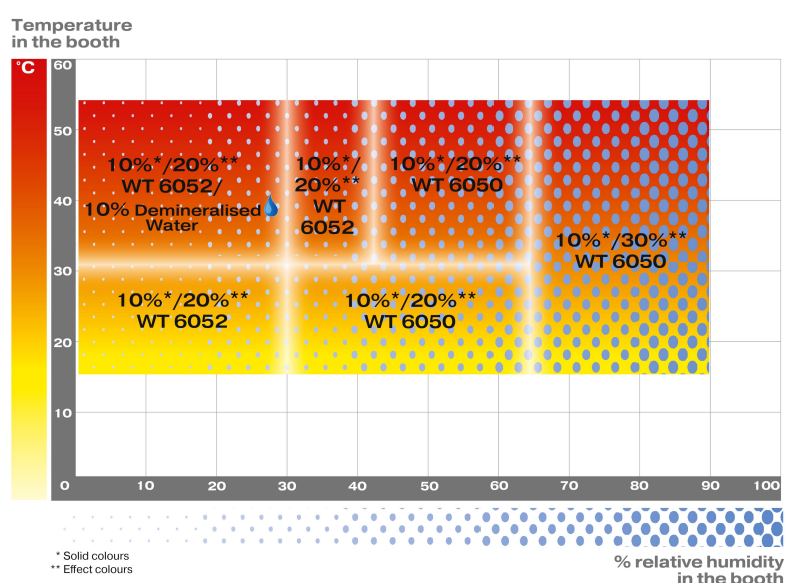
Apply a Permasolid HS Clear Coat to finish the repair.

Permahyd® Hi-TEC Base Coat 480

Climate guide

Use the Climate Poster to select the correct WT Additive. Repair size should also be considered, larger repairs may require a slower adjustment.

Refer to booth temperature on spray cycle, check relative humidity in booth with Hygrometer
Do not leave Hygrometer in booth during bake cycle



30% WT Additive 6050 can be added when relative humidity is above 65%, only for Metallic and Pearl colors

WT Additive 6050:

standard additive for small to medium repairs and for humidity between 30-70%

WT Additive 6052:

Slower additive for lower humidity below 30% and for larger repairs. Also well suited when high temperature and medium to low humidity are combined

Will also help on large surface in lower humidity with/without higher temperature.

Permahyd Demineralized Water 6000:

this can be added in very low humidity together with higher temperature conditions

Will also help on large surface in lower humidity with/without higher temperature.

Permahyd® Hi-TEC Base Coat 480

Products

	Permahyd® Hi-TEC Base Coat 480
	10 - 20 µm Effect Colors 12 - 25 µm Solid Colors
	145 m²/l at 1 micron dry film thickness Due to different hardener characteristics and different mixing ratios of the ready-to-use mixture in some TDS versions, the theoretical coverage calculation may vary. Note: The practical material consumption depends on several factors, e.g. geometry of the object, surface formation, application method, spray gun setting, inlet pressure, etc.
	Clean after use with a suitable waterborne guncleaner.

Remarks

- Material has to be at room temperature (18-25°C) before use.
- Permahyd Hi-TEC Base Coat 480 has to be filtered through waterproof 125 µm quick sieves before application by cup system (e.g. SATA or 3M).
- All tools and equipment used with this product must be approved for waterborne paint.
- Flash-off time can be reduced by using air blowers, spray booth blower systems or increasing spray booth temperature.
- Allow additional time for preheating up to panel temperature.
- All stated drying and flash-off times are related to relative humidity and type of blowing equipment.
- Best to be used within one working day after addition of the WT Additive 6050/6052.
- Permahyd Hi-TEC Base Coat 480 hardened and non hardened has to be overcoated with Clear Coat within 72 hours.
- Ready for use, non-activated, Permahyd Hi-TEC 480 Base Coat can be used within 6 months, but WT Additive 6050/6052 must be added again in the same ratio before using. We advise to make a colour spray-out card prior to applying on the vehicle. Opacity may be affected by this 2nd addition of WT Additive 6050/6052.
- Mixing machine should not exceed 2 x 15 minutes cycles in 24 hour period.
- New unopened cans of toners/tints should be adequately stirred before use.
- Recommended transport and storage between 5 and 35°C (do not expose at temperature below 5°C).

Permahyd® Hi-TEC Base Coat 480

Optional Smart Repair process:

Permahyd Hi-TEC Base Coat 480 mixed 1:1 with Permahyd Blend-in Additive 1050 + 10% Permahyd Flop Control WT 386 (Permahyd WT Additive 6050 / 6052 is not needed but can be included).

This mixture is applied in 3 - 5 light coats with reduced spray pressure (0.8 - 1.5 bar) to the repair spot / fade-out. Flash-off until matt and extend the area of application after each coat.

After the respective final flash-off time, a clearcoat can be applied.

Consult Safety Data Sheet prior to use. Observe the precautionary notices displayed on the container.

All other products referred to in the refinish build up are from our Spies Hecker product range. System properties will not be valid when the related material is used in combination with any other materials or additives which are not part of our Spies Hecker product range, unless explicitly indicated otherwise.

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