



FLOWTITE Case Studies

- Bridge Dewatering -



AMIATIT PIPE SYSTEMS

The FLOWTITE GRP piping products and accessories sold by the AMIANTIT Group offer many advantages.




The worldwide product availability of FLOWTITE GRP pipes has established bridge dewatering projects all over the world. This case study brochure represents only a small extract of the available references.

Many other countries around the world realized a huge number of installations and an increasing number of projects are recently in work.



Further information about additional references and case studies can be found on our website at www.amiantit.com!

Additional information about product advantages and available product range of our GRP pipes is available. Please request them from your local dealer.

Case Study -1-

PROJECT NAME:	AS 2 Assingberg - Steinberg	
Community/Country:	Austria	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of bridge dewatering standard pipelines at 3 bridges for highway A2.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ new installation	
<i>demanded standards / specifications / approvals:</i>	costumer specific (Asfinag)	
<i>Quality:</i>	Standard	
<i>Special requirement on pipe-system:</i>	Coloured fittings	
<i>project value in US\$:</i>	US\$ 105,700	
	<i>chosen pipe system:</i>	<ul style="list-style-type: none"> ■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ UV resistance; high product life; fast and easy installation; economical
Project owner:	Asfinag, Vienna	
consultant / engineer:	Asfinag, Vienna	
contractor:	Alpine, Spittal/Drau	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	1,350	
<i>Diameter DN min / max (mm):</i>	200 / 400	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	FLOWTITE standard couplings	
<i>fittings used:</i>	Elbows, tees, eccentric reducers	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>Project duration:</i>	1.5 months	
<i>Year start / end:</i>	2010	
Summary:	Fast installation due to light weight.	
		




Case Study -2-

PROJECT NAME:	Bridge dewatering A2, Zirknitzgrabenbrücke	
Community/Country:	Austria	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of standard pipelines for the collection of surface water.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ new installation	
<i>demanded standards / specifications / approvals:</i>	costumer specific (Asfinag)	
<i>Quality:</i>	Standard	
<i>Special requirement on pipe-system:</i>	Corrosion resistance	
<i>project value in US\$:</i>	US\$ 80,000	
		
<i>chosen pipe system:</i>		
<i>why our product?</i>		<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance
Project owner:	ASFINAG, Vienna	
consultant / engineer:	ASFINAG, Vienna	
contractor:	Arge Swietelsky – Swietelsky Tunnelbau, Vienna	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	620	
<i>Diameter DN min / max (mm):</i>	400	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	FLOWTITE standard couplings	
<i>fittings used:</i>	V2A joints	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>quality measures during installation:</i>	Tightness tests	
<i>Project duration:</i>	3 months	
<i>Year start / end:</i>	2005	
Summary:	Easy installation due to light weight, perfect corrosion resistance.	
		




Case Study -3-

PROJECT NAME:	Bridge dewatering pipeline motorway bridge Opatovice	
Community/Country:	Czech Republic	
Amiantit location	AMITECH Germany GmbH	
Description:	Standard pipeline for the collection of surface water.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ new installation	
<i>demanded standards / specifications / approvals:</i>	EN 14 364 CSN 73 6201 TKP ZTKP	
<i>Quality:</i>	Standard	
<i>Special requirement on pipe-system:</i>	UV resistance Corrosion resistance	
<i>project value in US\$:</i>	US\$ 14,500	
	<i>chosen pipe system:</i>	■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; variable system/material; less maintenance as result of self cleaning effect
Project owner:	ŘSD ČR, Prague	
consultant / engineer:	VPÙ DECO Prague	
contractor:	VAO s.r.o. Liberec für Metrostav a.s. Division 4, Prague	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	276	
<i>Diameter DN min / max (mm):</i>	200 / 250	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	FLOWTITE standard couplings	
<i>fittings used:</i>	Steel fittings	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>Project duration:</i>	6 months	
<i>Year start / end:</i>	2008 / 2009	
Summary:	The bridge is located at an important crossing of the D11, the highway from Prague to Hradec Kralove. The light weight and easy to install GRP pipe system provides now a safe and reliable dewatering of this important monument.	
		




Case Study -4-

PROJECT NAME:	Bridge dewatering pipeline motorway bridge Tabor		
Community/Country:	Czech Republic		
Amiantit location	AMITECH Germany GmbH		
Description:	Standard pipeline for the collection of surface water.		
<i>application:</i>	Bridge dewatering		
<i>transported medium:</i>	Sewage		
<i>working pressure:</i>	1 bar / gravity		
<i>type of project:</i>	■ new installation		
<i>demanded standards / specifications / approvals:</i>	EN 14 364 CSN 736201 TKP ZTKP		
<i>Quality:</i>	Standard		
<i>Special requirement on pipe-system:</i>	UV-resistance Corrosion resistance		
<i>project value in US\$:</i>	US\$ 8,800		
			<i>chosen pipe system:</i> ■ GRP round filament
			<i>why our product?</i> <ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; variable system/material; less maintenance as result of self cleaning effect
Project owner:	ŘSD ČR, Prague		
consultant / engineer:	VPŮ DECO Prague		
contractor:	VAO s.r.o. Liberec für Metrostav a.s. Division 4, Prague		
Pipe Details - material:			
<i>Total pipeline length (m):</i>	264		
<i>Diameter DN min / max (mm):</i>	200 / 400		
<i>Pressure PN min / max (bar):</i>	1		
<i>Stiffness SN min / max (N/m²):</i>	10000		
<i>joint types:</i>	FLOWTITE standard couplings		
<i>fittings used:</i>	Elbows		
Installation Details:			
<i>type:</i>	■ aerial		
<i>deflection min/max:</i>	max 3°		
<i>Project duration:</i>	1 month		
<i>Year start / end:</i>	2009		
Summary:	The project owner requested highest quality and best installation in a short time. Mandatory was also an absolutely tight system which is guaranteed by the use of FLOWTITE GRP pipes for the drainage network.		
			



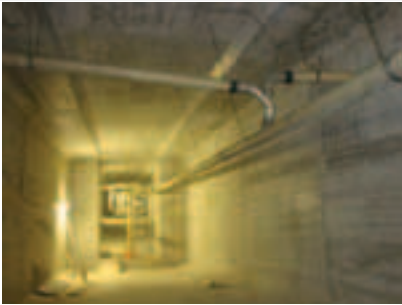
Case Study -5-

PROJECT NAME:	Bridge dewatering Chomutov	
Community/Country:	Czech Republic	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of standard pipeline for the collection of drainage at a motorway bridge.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ new installation	
<i>demanded standards / specifications / approvals:</i>	EN 14 364 CSN 736201 TKP ZTKP	
<i>Quality:</i>	Standard	
<i>Special requirement on pipe-system:</i>	UV resistance Corrosion resistance	
<i>project value in US\$:</i>	US\$ 15,000	
	<i>chosen pipe system:</i>	■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; variable system/material; less maintenance as result of self cleaning effect
Project owner:	ŘSD ČR, Prague	
consultant / engineer:	VPÙ DECO Prague	
contractor:	VAO s.r.o. Liberec für Metrostav a.s. Division 4, Prague	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	850	
<i>Diameter DN min / max (mm):</i>	150 / 300	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	FLOWTITE standard couplings	
<i>fittings used:</i>	Elbows, reducers	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>Project duration:</i>	3 months	
<i>Year start / end:</i>	2007	
Summary:	The 4-lane highway between Czech Republic and Germany is an important part of the highway network. The reliable dewatering system made of FLOWTITE GRP pipes guarantees a smooth operation for a long time.	
		




Case Study -6-

PROJECT NAME:	Bridge dewatering pipeline, motorway bridge Decin	
Community/Country:	Czech Republic	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of standard pipeline for the collection of surface water.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ replacement	
<i>demanded standards / specifications / approvals:</i>	EN 14 364 CSN 736201 TKP ZTKP	
<i>Quality:</i>	Standard	
<i>Special requirement on pipe-system:</i>	UV resistance Corrosion resistance	
<i>project value in US\$:</i>	US\$ 57,000	
		
<i>chosen pipe system:</i>	■ GRP round filament	
<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; UV resistance 	
Project owner:	ŘSD ČR, Prague	
consultant / engineer:	PONTEX s.r.o. Praha	
contractor:	VAO s.r.o. Liberec for JHS s.r.o. Praha	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	1,710	
<i>Diameter DN min / max (mm):</i>	150 / 250	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	FLOWTITE standard couplings	
<i>fittings used:</i>	Elbows	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>Project duration:</i>	11 months	
<i>Year start / end:</i>	2008 / 2009	
Summary:	The important 4 lane highway was renovated step by step. In this context, the old corroded steel dewatering network was replaced by the new, non corroding and long lasting GRP pipeline system.	
		


Case Study -7-

PROJECT NAME:	Bridge dewatering pipeline motorway bridge Litomerice	
Community/Country:	Czech Republic	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of standard pipeline for the collection of surface water, laid inside of the bridge.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar	
<i>type of project:</i>	■ new installation	
<i>demanded standards / specifications / approvals:</i>	EN 14 364 CSN 736201 TKP ZTKP	
<i>Quality:</i>	Standard	
<i>Special requirement on pipe-system:</i>	UV resistance	
<i>project value in US\$:</i>	US\$ 15,900	
	<i>chosen pipe system:</i>	■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; variable material; less maintenance as result of self cleaning effect
Project owner:	ŘSD ČR, Prague	
consultant / engineer:	PONTEX s.r.o. Praha	
contractor:	VAO s.r.o. Liberec for SMP CZ a.s. Praha	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	396	
<i>Diameter DN min / max (mm):</i>	150 / 200	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	FLOWTITE standard couplings	
<i>fittings used:</i>	Steel elbows and fittings	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>Project duration:</i>	9 months	
<i>Year start / end:</i>	2008 / 2009	
Summary:	This new bridge is an important part of a town highway and is a connection to the highway D8. The project owner requested highest quality and aesthetics which could be perfectly realized with the FLOWTITE GRP pipe system.	
		

Case Study -8-

PROJECT NAME:	Bridge dewatering pipeline, bypass Prague	
Community/Country:	Czech Republic	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of standard pipelines for the collection of surface water at 20 bridges.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ new installation	
<i>demanded standards / specifications / approvals:</i>	EN 14 364 CSN 736201 TKP ZTKP	
<i>Quality:</i>	Standard	
<i>Special requirement on pipe-system:</i>	UV resistance	
<i>project value in US\$:</i>	US\$ 423,400	
		
<i>chosen pipe system:</i>	■ GRP round filament	
<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; variable material; UV resistance 	
Project owner:	ŘSD ČR, Prague	
consultant / engineer:	Pragoprojekt, Prague	
contractor:	VAO s.r.o. Liberec	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	15,178	
<i>Diameter DN min / max (mm):</i>	150 / 250	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	FLOWTITE standard couplings	
<i>fittings used:</i>	Bends, reducers	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>Project duration:</i>	24 months	
<i>Year start / end:</i>	2008 / 2010	
Summary:	The bypass highway of Prague is currently the biggest building project of its kind in Mid-Europe. With more than 15 km, the FLOWTITE GRP pipe delivery includes material for the installation of dewatering systems for the 20 bridges which are part of this project.	
		



Case Study -9-

PROJECT NAME:	Bridge dewatering pipeline motorway bridge Kamenný Dvůr	
Community/Country:	Czech Republic	
Amiantit location	AMITECH Germany GmbH	
Description:	Standard pipeline for the collection of surface water.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ new installation	
<i>demanded standards / specifications / approvals:</i>	EN 14 364 CSN 736201 TKP ZTKP	
<i>Quality:</i>	Standard	
<i>Special requirement on pipe-system:</i>	UV-resistance Corrosion resistance	
<i>project value in US\$:</i>	US\$ 80,000	
	<i>chosen pipe system:</i>	■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; variable system/material; less maintenance as result of self cleaning effect
Project owner:	ŘSD ČR, Prague	
consultant / engineer:	PONTEX s.r.o., Prague	
contractor:	VAO s.r.o. Liberec für Metrostav a.s. Divize 4, Prague	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	2,640	
<i>Diameter DN min / max (mm):</i>	150 / 350	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	FLOWTITE standard couplings	
<i>fittings used:</i>	Elbows	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>Project duration:</i>	10 months	
<i>Year start / end:</i>	2008 / 2009	
		




Case Study -10-

PROJECT NAME:	DK, Silkeborg, A66, Dalbro over Funder Adal	
Community/Country:	Skanderborg / Denmark	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of flame retardant bridge dewatering pipelines.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar	
<i>type of project:</i>	■ new installation	
<i>demanded standards / specifications / approvals:</i>	ZTV-ING	
<i>Quality:</i>	Flame retardant	
<i>Special requirement on pipe-system:</i>	Flame retardant colour coated	
<i>project value in US\$:</i>	US\$ 113,000	
	<i>chosen pipe system:</i>	<ul style="list-style-type: none"> ■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; UV resistance
Project owner:	Vejdirektoratet, Skanderborg	
consultant / engineer:	+S Ingenieur-Consult GmbH & Co. KG, Nürnberg und NIRAS A/S, Allerød	
contractor:	Klüsserath GbR, Piesport/Mosel	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	1,850	
<i>Diameter DN min / max (mm):</i>	150 / 400	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	Connectors	
<i>fittings used:</i>	Elbows, V2A joints	
Installation Details:		
<i>type:</i>	■ open trench	
<i>deflection min/max:</i>	max 3°	
<i>quality measures during installation:</i>	Tightness tests	
<i>Project duration:</i>	12 months	
<i>Year start / end:</i>	2009 / 2010	
Summary:	The biggest bridge monument at the new highway A66 was equipped with a reliable dewatering system made of FLOWTITE GRP pipes.	
		




Case Study -11-

PROJECT NAME:	A72, BW 6 a	
Community/Country:	Hof / Germany	
Amiantit location	AMITECH Germany GmbH	
Description:	Inside Installation of flame retardant bridge dewatering pipelines at a German highway bridge.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ replacement	
<i>demanded standards / specifications / approvals:</i>	ZTV-ING	
<i>Quality:</i>	Flame retardant	
<i>Special requirement on pipe-system:</i>	Flame retardant colour coated	
<i>project value in US\$:</i>	US\$ 45,000	
		
<i>chosen pipe system:</i>	■ GRP round filament	
<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; UV resistance 	
Project owner:	Autobahndirektion Nordbayern, Dienststelle Bayreuth	
consultant / engineer:	Autobahndirektion Nordbayern	
contractor:	BSK Betonsanierung GmbH, Leupoldsgrün	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	534	
<i>Diameter DN min / max (mm):</i>	200 / 250	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	Connectors	
<i>fittings used:</i>	Bends, saddles, reducers	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>quality measures during installation:</i>	Tightness tests	
<i>Project duration:</i>	3 months	
<i>Year start / end:</i>	2009	
Summary:	An inconspicuous bridge building with imposing inner life.	




Case Study -12-

PROJECT NAME:	A52, Ruhrtalbrücke Mintard	
Community/Country:	Mülheim a. d. Ruhr / Germany	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of flame retardant bridge dewatering pipelines at motorway bridge.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ replacement	
<i>demanded standards / specifications / approvals:</i>	ZTV-ING	
<i>Quality:</i>	Flame retardant	
<i>Special requirement on pipe-system:</i>	Flame retardant colour coated	
<i>project value in US\$:</i>	US\$ 250,000	
<i>chosen pipe system:</i>	■ GRP round filament	
<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; UV resistance 	
Project owner:	Landesbetrieb Straßenbau NRW; Autobahn-niederlassung, Krefeld	
consultant / engineer:	LSB, Krefeld	
contractor:	Klüsserath GbR, Piesport/Mosel	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	3,800	
<i>Diameter DN min / max (mm):</i>	200 / 400	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	Connectors	
<i>fittings used:</i>	Bends, saddles, reducers	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>quality measures during installation:</i>	Tightness tests	
<i>Project duration:</i>	10 months	
<i>Year start / end:</i>	2009 / 2010	
Summary:	This bridge is the longest road bridge in Germany made of steel and has been now equipped with a dewatering system made of GRP.	
		




Case Study -13-

PROJECT NAME:	A73, Talbrücken Wiedersbach und Schleuse	
Community/Country:	Oberrod / Germany	
Amiantit location	AMITECH Germany GmbH	
Description:	Inside Installation of flame retardant bridge dewatering pipelines at a German highway bridge.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ replacement	
<i>demanded standards / specifications / approvals:</i>	ZTV-ING	
<i>Quality:</i>	Flame retardant	
<i>Special requirement on pipe-system:</i>	Flame retardant colour coated	
<i>project value in US\$:</i>	US\$ 296,600	
	<i>chosen pipe system:</i>	■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; UV resistance
Project owner:	TLBV, Thüringen, Erfurt	
consultant / engineer:	DEGES GmbH, Berlin	
contractor:	Ed. Züblin AG, Chemnitz	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	2,662	
<i>Diameter DN min / max (mm):</i>	150 / 800	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	Connectors	
<i>fittings used:</i>	Bends, saddles, reducers	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>quality measures during installation:</i>	Tightness tests	
<i>Project duration:</i>	8 months	
<i>Year start / end:</i>	2006 / 2007	
	Summary:	
	The bridge is an imposing building and an important part of the highway A73 in South Thuringia.	




Case Study -14-

PROJECT NAME:	B41, Johannisbrücke	
Community/Country:	Saarbrücken / Germany	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of flame retardant bridge dewatering pipelines.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ replacement	
<i>demanded standards / specifications / approvals:</i>	ZTV-ING	
<i>Quality:</i>	Flame retardant	
<i>Special requirement on pipe-system:</i>	Flame retardant colour coated	
<i>project value in US\$:</i>	US\$ 65,000	
		
<i>chosen pipe system:</i>	■ GRP round filament	
<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; UV resistance 	
Project owner:	Straßenbauverwaltung, Saarland	
consultant / engineer:	H. J. Schiffer & Partner GmbH, Saarbrücken	
contractor:	GBS mbH & Co. KG, Homburg/Saar	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	990	
<i>Diameter DN min / max (mm):</i>	150 / 200	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	Connectors	
<i>fittings used:</i>	Bends, saddles, reducers	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>quality measures during installation:</i>	Tightness tests	
<i>Project duration:</i>	4 months	
<i>Year start / end:</i>	2010	
		




Case Study -15-

PROJECT NAME:	A6, Jagst- und Gronachtalbrücke	
Community/Country:	Satteldorf / Germany	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of flame retardant bridge dewatering pipelines.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ replacement	
<i>demanded standards / specifications / approvals:</i>	ZTV-ING	
<i>Quality:</i>	Flame retardant	
<i>Special requirement on pipe-system:</i>	Flame-retardant colour coated	
<i>project value in US\$:</i>	US\$ 90,000	
	<i>chosen pipe system:</i>	■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; UV resistance
Project owner:	Regional council, Stuttgart	
consultant / engineer:	Regional council, Stuttgart	
contractor:	Klüsserath GbR, Piesport/Mosel	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	1,850	
<i>Diameter DN min / max (mm):</i>	150 / 250	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	Connectors	
<i>fittings used:</i>	Bends, reducers and special branches	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>quality measures during installation:</i>	Tightness tests	
<i>Project duration:</i>	6 months	
<i>Year start / end:</i>	2008 / 2009	
Summary:	The bridges are an important part of the heavily used highway A6. They are now both equipped with a long lasting, reliable dewatering network made of GRP.	
		

Case Study -16-

PROJECT NAME:	A 81, Mühlbachtalbrücke	
Community/Country:	Satteldorf / Germany	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of flame retardant bridge dewatering pipelines.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ replacement	
<i>demanded standards / specifications / approvals:</i>	ZTV-ING	
<i>Quality:</i>	Flame retardant	
<i>Special requirement on pipe-system:</i>	Flame-retardant colour coated	
<i>project value in US\$:</i>	US\$ 90,000	
	<i>chosen pipe system:</i>	<ul style="list-style-type: none"> ■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; UV resistance
Project owner:	Regional council, Stuttgart	
consultant / engineer:	Regional council, Stuttgart	
contractor:	Klüsserath GbR, Piesport/Mosel	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	1,850	
<i>Diameter DN min / max (mm):</i>	150 / 250	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	Connectors	
<i>fittings used:</i>	Bends, reducers and branches	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>quality measures during installation:</i>	Tightness tests	
<i>Project duration:</i>	6 months	
<i>Year start / end:</i>	2008 / 2009	
		




Case Study -17-

PROJECT NAME:	B27, Körschtalviadukt			
Community/Country:	Stuttgart-Möhringen / Germany			
Amiantit location	AMITECH Germany GmbH			
Description:	Installation of flame retardant bridge dewatering pipelines.			
<i>application:</i>	Bridge dewatering			
<i>transported medium:</i>	Sewage			
<i>working pressure:</i>	1 bar / gravity			
<i>type of project:</i>	<ul style="list-style-type: none"> ■ new installation ■ replacement 			
<i>demanded standards / specifications / approvals:</i>	ZTV-ING			
<i>Quality:</i>	Flame retardant			
<i>Special requirement on pipe-system:</i>	Flame-retardant colour coated			
<i>project value in US\$:</i>	US\$ 135,000			
			<i>chosen pipe system:</i>	<ul style="list-style-type: none"> ■ GRP round filament
			<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; UV resistance
Project owner:	Regierungspräsidium Stuttgart ref. 47.4			
consultant / engineer:	Holzapfel, Rüdts & Partner GmbH, Stuttgart			
contractor:	Ed. Züblin AG und ESB Kirchhoff GmbH & Co. KG, Stuttgart			
Pipe Details - material:				
<i>Total pipeline length (m):</i>	730			
<i>Diameter DN min / max (mm):</i>	150 / 200			
<i>Pressure PN min / max (bar):</i>	1			
<i>Stiffness SN min / max (N/m²):</i>	10000			
<i>joint types:</i>	Connectors			
<i>fittings used:</i>	Bends, reducers and branches			
Installation Details:				
<i>type:</i>	<ul style="list-style-type: none"> ■ aerial 			
<i>deflection min/max:</i>	max 3°			
<i>quality measures during installation:</i>	Tightness tests			
<i>Project duration:</i>	7 months			
<i>Year start / end:</i>	2010			
		Summary:		
		The bridge, built in 1964 with a height up to 40m is an important building for the inner-city traffic in Stuttgart and now equipped with a new reliable dewatering system made of GRP.		




Case Study -18-

PROJECT NAME:	B257, Talbrücke Lambach	
Community/Country:	Wolsfeld / Germany	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of flame retardant bridge dewatering pipelines.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ new installation	
<i>demanded standards / specifications / approvals:</i>	ZTV-ING	
<i>Quality:</i>	Flame retardant	
<i>Special requirement on pipe-system:</i>	Flame-retardant colour coated	
<i>project value in US\$:</i>	US\$ 12,300	
<i>chosen pipe system:</i>	■ GRP round filament	
<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ high product life; fast and easy installation; economical; UV resistance 	
Project owner:	LBM, Trier	
consultant / engineer:	LBM, Trier	
contractor:	Raimund Höllein Carolinenhütte GmbH, Kallmünz	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	90	
<i>Diameter DN min / max (mm):</i>	150 / 400	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	Connectors	
<i>fittings used:</i>	Bends, reducers and branches	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>quality measures during installation:</i>	Tightness tests	
<i>Project duration:</i>	1 month	
<i>Year start / end:</i>	2007	
Summary:	The bridge drainage systems color had to harmonize with the railing colour of the bridge.	


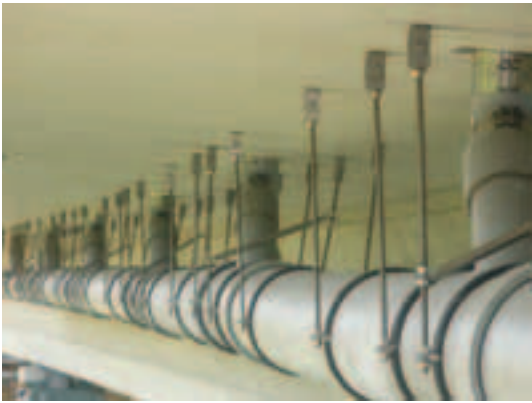

Case Study -19-

PROJECT NAME:	Dewatering of Konin bridge – road 25	
Community/Country:	Poland	
Amiantit location	AMITECH Poland Sp. z o.o.	
Description:	The dewatering pipeline was located inside the bridge construction.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ new installation	
<i>demanded standards / specifications / approvals:</i>	Technical Approval AT/2007-03-2279	
<i>Quality:</i>	Standard	
<i>Special requirement on pipe-system:</i>	Colour pipes and fittings (partly) for pipeline assembled on bridgehead. 100% UV resistance	
<i>project value in US\$:</i>	US\$ 246,000	
	<i>chosen pipe system:</i>	■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ flow characteristics ■ colouring
Project owner:	Urząd Miasta, Konin	
consultant / engineer:	Transprojekt, Gdańsk	
contractor:	HB6, Warszawa	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	3,500	
<i>Diameter DN min / max (mm):</i>	200 / 500	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	5000 / 10000	
<i>joint types:</i>	FLOWTITE standard couplings	
<i>fittings used:</i>	Elbows, eccentric reducers, saddles, revision shafts, branches	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max. 3°	
<i>quality measures during installation:</i>	Tightness test of whole pipeline after installation	
<i>Project duration:</i>	4 months	
<i>Year start / end:</i>	2007	
Summary:	The whole pipeline consists of 900 pieces of fittings and more than 3000m of FLOWTITE GRP pipes.	
		



Case Study -20-

PROJECT NAME:	Bridge in Płock	
Community/Country:	Płock / Poland	
Amiantit location	AMITECH Poland Sp. z o.o.	
Description:	Installation of standard pipes for the bridge dewatering in Płock.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ new installation	
<i>demanded standards / specifications / approvals:</i>	Technical approval	
<i>Quality:</i>	Standard	
<i>Special requirement on pipe-system:</i>	Wide variety of profiles and various elements	
<i>project value in US\$:</i>	US\$ 106,700	
	<i>chosen pipe system:</i>	<ul style="list-style-type: none"> ■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance ■ chem. properties ■ mech. properties
Project owner:	Municipal Office of Płock	
consultant / engineer:	Usługi Projektowe Jerzy Gęca, Warsaw	
contractor:	Mostostal Puławy S. A., Puławy	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	2,500	
<i>Diameter DN min / max (mm):</i>	200 / 500	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	FLOWTITE standard couplings	
<i>fittings used:</i>	Elbows, branches, reducers, saddles	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>quality measures during installation:</i>	Tightness test acc. to EN 1610	
<i>Project duration:</i>	3 months	
<i>Year start / end:</i>	2006	
Summary:	Beside the delivery of FLOWTITE pipes, more than 900 elbows, branches, eccentric reducers saddle made of GRP and painted in a specific RAL color, compliant to the platform color, were delivered.	
		




Case Study -21-

PROJECT NAME:	Bridge dewatering pipeline Jelse bridge	
Community/Country:	Slovenia	
Amiantit location	APS South East Europe	
Description:	Standard pipeline for the collection of surface water.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	<ul style="list-style-type: none"> ■ new installation 	
<i>demanded standards / specifications / approvals:</i>	EN 14364	
<i>Quality:</i>	Standard	
<i>project value in US\$:</i>	US\$ 34,500	
	<i>chosen pipe system:</i>	<ul style="list-style-type: none"> ■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance
Project owner:	DARS d.d., Celje	
consultant / engineer:	PROMICO d.o.o., Ljubljana	
contractor:	KPL d.d., Ljubljana	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	800	
<i>Diameter DN min / max (mm):</i>	200 / 500	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	FLOWTITE standard couplings	
<i>fittings used:</i>	Bends, wyes, reducers, end closures, connection joints	
Installation Details:		
<i>type:</i>	<ul style="list-style-type: none"> ■ aerial 	
<i>deflection min/max:</i>	max. 3°	
<i>Project duration:</i>	1 month	
<i>Year start / end:</i>	2007	
Summary:	All pipes and fittings were coloured in grey to be more compliant with the colour of the bridge.	
		




Case Study -22-

PROJECT NAME:	Bridge dewatering pipeline Lenart bridge		
Community/Country:	Slovenia		
Amiantit location	APS South East Europe		
Description:	Standard pipeline for the collection of surface water.		
<i>application:</i>	Bridge dewatering		
<i>transported medium:</i>	Sewage		
<i>working pressure:</i>	1 bar / gravity		
<i>type of project:</i>	■ new installation		
<i>demanded standards / specifications / approvals:</i>	EN 14364		
<i>Quality:</i>	Standard		
<i>project value in US\$:</i>	US\$ 9,800		
			
<i>chosen pipe system:</i>	■ GRP round filament		
<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance 		
Project owner:	DARS d.d., Celje		
consultant / engineer:	POINTING d.o.o., Maribor		
contractor:	KPL d.d., Ljubljana		
Pipe Details - material:			
<i>Total pipeline length (m):</i>	200		
<i>Diameter DN min / max (mm):</i>	200		
<i>Pressure PN min / max (bar):</i>	1		
<i>Stiffness SN min / max (N/m²):</i>	10000		
<i>joint types:</i>	FLOWTITE standard couplings		
<i>fittings used:</i>	Bends, wyes, end closures, connection joints		
Installation Details:			
<i>type:</i>	■ aerial		
<i>deflection min/max:</i>	max 3°		
<i>Project duration:</i>	2 weeks		
<i>Year start / end:</i>	2007		
Summary:	All pipes and fittings were coloured in grey to be more compliant with the color of the bridge.		

Case Study -23-

PROJECT NAME:	Bridge dewatering of 15 bridges along the A6 Vienna-Bratislava	
Community/Country:	Slovakia	
Amiantit location	AMITECH Germany GmbH	
Description:	Installation of standard pipelines for the collection of surface water.	
<i>application:</i>	Bridge dewatering	
<i>transported medium:</i>	Sewage	
<i>working pressure:</i>	1 bar / gravity	
<i>type of project:</i>	■ new installation	
<i>demanded standards / specifications / approvals:</i>	Asfinag Standard DIN, OENORM	
<i>Quality:</i>	Standard	
<i>Special requirement on pipe-system:</i>	Fast installation, light weight, corrosion resistant	
	<i>chosen pipe system:</i>	■ GRP round filament
	<i>why our product?</i>	<ul style="list-style-type: none"> ■ light weight ■ corrosion resistance
Project owner:	ASFINAG A-1010, Vienna	
consultant / engineer:	ASFINAG A-1010, Vienna	
contractor:	ArgeA6 (Hinteregger, Pittel und Brausewetter, Züblin)	
Pipe Details - material:		
<i>Total pipeline length (m):</i>	1,425	
<i>Diameter DN min / max (mm):</i>	150 / 200	
<i>Pressure PN min / max (bar):</i>	1	
<i>Stiffness SN min / max (N/m²):</i>	10000	
<i>joint types:</i>	FLOWTITE standard couplings	
<i>fittings used:</i>	Tees, bends	
Installation Details:		
<i>type:</i>	■ aerial	
<i>deflection min/max:</i>	max 3°	
<i>quality measures during installation:</i>	Tightness tests	
<i>Project duration:</i>	3 months	
<i>Year start / end:</i>	2006	
		

Case Study -24-

PROJECT NAME:	Bridge dewatering at two viaducts, Pujayo and Montabliz		
Community/Country:	Santander		
Amiantit location	AMITECH Industrial Spain		
Description:	Drainage line for 2 viaducts Montabliz - lenght 720 m, height 150 m (highest bridge in Spain) and Pujayo - lenght 420 m, height 120 m and GRP downspouts. Scope included installation works, using both GRP coupling and chemical laminations (weldings).		
<i>application:</i>	Bridge dewatering		
<i>transported medium:</i>	Sewage		
<i>working pressure:</i>	2 bar		
<i>type of project:</i>	■ new installation		
<i>demanded standards / specifications / approvals:</i>	EN 1796 EN 14364		
<i>Quality:</i>	Standard		
<i>Special requirement on pipe-system:</i>	Installation service		
<i>project value in US\$:</i>	US\$ 500,000		
	<i>chosen pipe system:</i>		■ GRP round filament
	<i>why our product?</i>		■ corrosion resistance ■ mech. properties
Project owner:	Ministerio de Fomento, Madrid		
consultant / engineer:	APIA XXI, Madrid		
contractor:	Ferrovial Agromán, Madrid		
Pipe Details - material:			
<i>Total pipeline length (m):</i>	1,200		
<i>Diameter DN min / max (mm):</i>	150 / 450		
<i>Pressure PN min / max (bar):</i>	2		
<i>Stiffness SN min / max (N/m²):</i>	5000		
<i>joint types:</i>	Laminated joints / FLOWTITE standard couplings		
<i>fittings used:</i>	Spools		
Installation Details:			
<i>type:</i>	■ aerial		
<i>deflection min/max:</i>	max. 3°		
<i>quality measures during installation:</i>	Hydraulic testing		
<i>Project duration:</i>	3 months		
<i>Year start / end:</i>	2008		
Summary:	GRP pipe was the preferred choice due to the good long-term performance and outdoor properties, like no corrosion.		
			

Handbook is intended as a guide only. All values listed in the product specifications are nominal. Unsatisfactory product results may occur due to environmental fluctuations, variations in operating procedures, or interpolation of data. We highly recommend that any personnel using this data have specialised training and experience in the application of these products and their normal installation and operating conditions. The engineering staff should always be consulted before any of these products are installed to ensure the suitability of the products for their intended purpose and applications. We hereby state that we do not accept any liability, and will not be held liable, for any losses or damage which may result from the installation or use of any products listed in this handbook as we have not determined the degree of care required for product installation or service. We reserve the right to revise this data, as necessary, without notice. We welcome comments regarding this handbook.



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