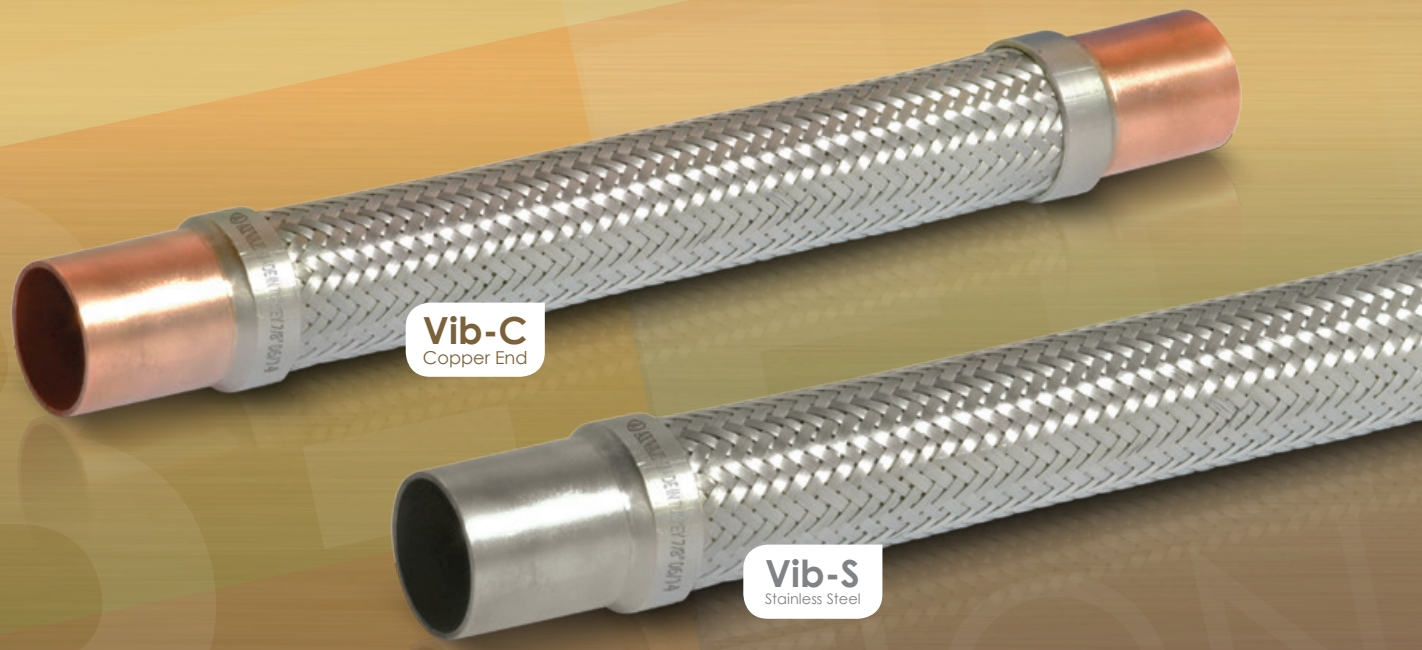
AYVAZ

VIB-FLEX

ANTI-VIBRATION HOSES



04.2016

www.ayvaz.com

AYVAZ

VIB-FLEX
ANTI-VIBRATION HOSES



Ayvaz's VIB-FLEX anti-vibration hoses are assembled using annularly corrugated stainless steel hose and high strength stainless steel braiding and copper or stainless steel welding ends.

They are designed for optimum performance mainly in refrigeration systems in order to absorb vibration and related damages also to prevent the noise occurs in mechanical piping of various applications.



AYVAZ ANTI-VIBRATION HOSES (VIB-FLEX)

Absorption of Vibration:

Vibration exists in mechanical systems may cause many serious problems for system manufacturers and the users. Vibration causes un-ignorable amount of material fatigue on the parts which are frequently exposed to it. Noise is also another issue to be prevented in order to provide a convenient operation for the users.

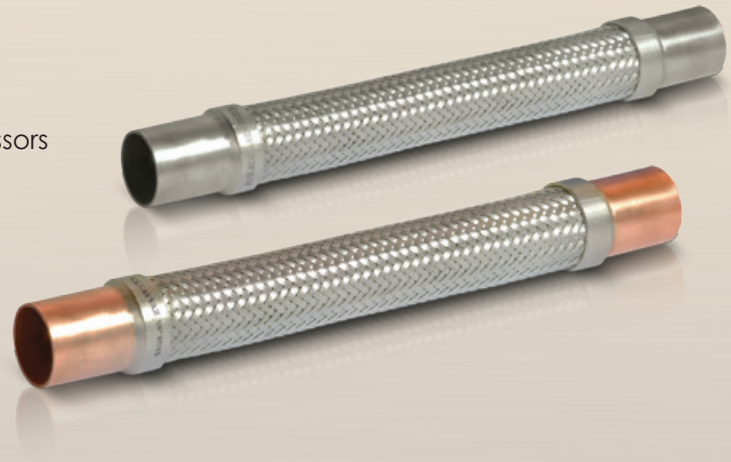
Anti-vibration hoses are used in supply lines in pumps, engines, cooling units or air conditioning equipment to reduce the transfer of vibration and noise.

Vibration absorbers are constructed with a corrugated inner hose and braided cover that helps to increase the pressure resistance rating and provides end limitations that annihilate the need for additional control assemblies.

What are the main application areas of VIB-FLEX?

Annularly corrugated metal hoses are selected according to the system pressure, temperature and the direction of the vibration and are used in the connections of the tools that cause a high level of vibration such as;

- Refrigeration Systems
- Air-conditioning units
- Heating pumps
- Pressured systems
- Pumps, motors, machines, compressors



What makes Ayvaz VIB-FLEX so unique?

VIB-FLEX's welding ends are welded to flexible hose with TIG welding method. Many of other manufacturers prefer soldering method to while bringing flexible metal hose and copper ends together. This simple method seems like an economical solution to complete the assembly.

But is it really what the users need? Let's take a deep look at both methods.

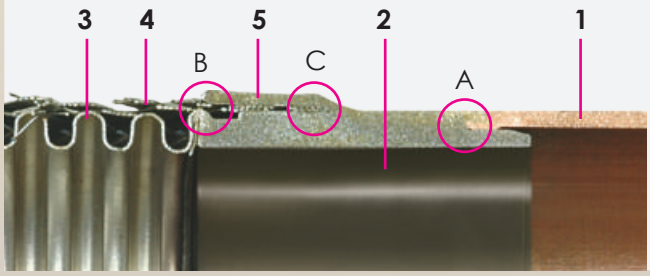
VIB-FLEX, TIG WELDING METHOD

• Triple welding action: VIB-FLEX is completed triple TIG welding action while bringing the flexible metal hose and the copper end together.

The first welding (A) attaches the copper ending to the connection ring while the second weld (B) attaches the connection ring to the flexible hose. The third weld (C) attaches the steel braiding and the external ring to the connection ring.

• TIG Welding: TIG welding has the ability of filling up empty spaces much, **minimizes the risk of pore formation** and it resists against extremely high temperatures.

VIB-FLEX, TIG WELDING METHOD



1) Copper end
2) Stainless steel connection ring
3) Flexible metal hose
4) Stainless steel braiding
5) Stainless steel external ring

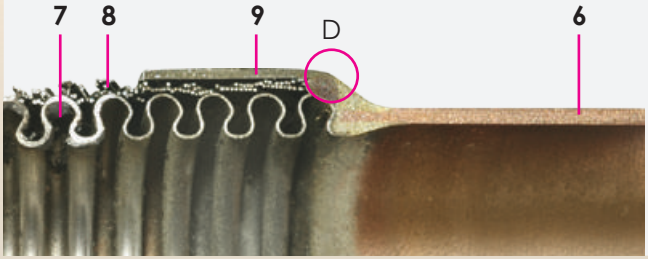
Soldering Made By Competitors

Soldering is bringing metals together with usually a silver based alloy under the temperature of 700 °C and 850 °C. The solder, marked by D, brings together different parts with help of an alloy.

This simple structure may have an economical advantage, that's because there's no need for connection ring and only a simple solder is made instead of 3 different welding processes. However, **it's not predictable for this structure to have consequences.**

The absence of the connection ring may cause serious problems.

SOLDERING MADE BY COMPETITORS

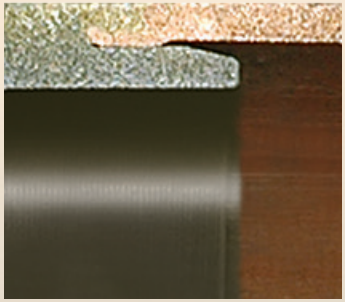


6) Copper or stainless steel end
7) Flexible metal hose
8) Stainless steel braiding
9) Bracelet ring

Triple TIG Welding

In TIG welding an arc is created between a non-consumable tungsten electrode and the metal being welded. The arc produces the required heat to melt the work and the shielding gas (pure argon), fed through the torch, keeps oxygen in the air away from the molten weld pool and the hot tungsten.

Tungsten is used for the electrode both because of its high melting temperature and good electrical characteristics. When filler metal becomes necessary, a separate filler rod is fed into the arc stream either manually or mechanically.



Quality

TIG Welding is largely used for welding different kinds of alloys of aluminium and stainless steel where quality is important.



Appearance

Since no flux is required, the weld joint is clean and free of voids. When manufacturing consumer products where appearance is of importance than the choice has to be TIG.

Main Advantages of Triple TIG Welding over Soldering



Safe and Easy

While anti vibration hoses with solder are installed to systems, the connection between hose and the copper ends are covered with a wet towel or cloth in order to protect the connections from over-heating which possibly damage the assembly.

Triple TIG welding process used at VIB-FLEX prevents such problems. Because it is impossible to damage TIG welding with over-heating. This safe structure also reduces the installation time and costs accordingly.



Vertical Installation

Vertical Installation is not a nightmare anymore

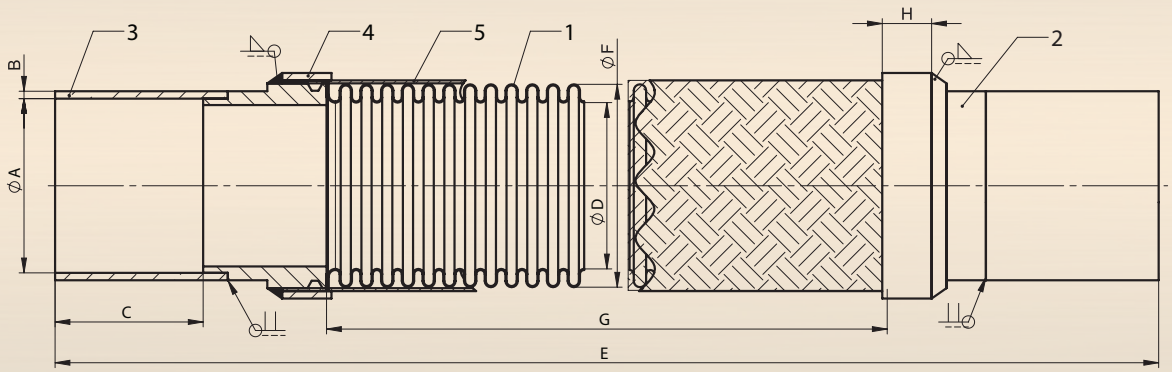
Usually, installation of anti-vibration hoses in cold places causes a frozen layer to be formed up around the hose surface. When the system is shut down, the ice starts melting and the water flows downwards to the welding end. Other manufacturers' design allows the water to pile up in between flexible hose and external ring. When the system is restarted, the water will freeze again and its volume will increase therefore it causes the risk of explosion of the hose to inwards.

Thanks to the smart design of VIB-FLEX, there is no such space for water formation. The connection ring prevents such dangers and enable the hose assembly performs effectively.

Design and Operation Conditions

AYVAZ

VIB-FLEX
ANTI-VIBRATION HOSES



Temperature Range:	-80/+140 °C
Nominal Pressure:	Please see the product table for nominal pressure value.

1 Metal Hose Hose	Stainless Steel AISI 316L (EN 1.4404)
2 Connection Ring	Stainless Steel AISI 304 (EN 1.4301)
3 Welded End	Copper (Cu-DHP) or Stainless Steel AISI 304 (EN 1.4301)
4 External Ring	Stainless Steel AISI 304 (EN 1.4301)
5 Braiding	Stainless Steel AISI 304 (EN 1.4301)

Available Sizes and Product Features

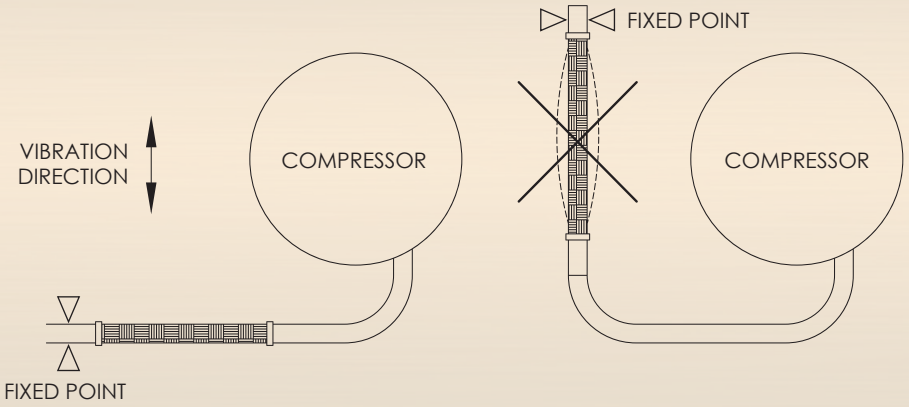
Size (inches)		Dimensions (mm)										Max. Working Pressure				Weight
"Vib-C Cu-End"	"Vib-S SS-End"											Vib-C		Vib-S		
		ØA	± tol	B	C	E	± tol	D	F	G	H	bar	psi	bar	psi	kg
Vib-C ¼"	Vib-S ¼"	6,6	±0,2	1	20	230	±5	6,3	9,9	170	10	44,8	650	60	870	0,052
Vib-C ⅜"	Vib-S ⅜"	9,7	-0,1/+0,3	1	20	230	±5	10,1	14,4	170	10	44,8	650	60	870	0,058
Vib-C ½"	Vib-S ½"	12,9	-0,1/+0,3	1	20	230	±5	12,2	16,2	150	10	44,8	650	60	870	0,1
Vib-C ⅝"	Vib-S ⅝"	16,2	-0,1/+0,3	1	20	255	±5	15,6	20,8	177	10	44,8	650	60	870	0,138
Vib-C ¾"	Vib-S ¾"	19,3	-0,1/+0,3	1	25	255	±5	15,6	20,8	179	10	44,8	650	60	870	0,18
Vib-C ⅞"	Vib-S ⅞"	22,4	-0,2/+0,3	1,5	25	290	±5	18,8	24,9	204	10	44,8	650	60	870	0,202
Vib-C 1⅛"	Vib-S 1⅛"	28,9	-0,2/+0,3	1,5	25	330	±5	24,6	31,3	244	10	41,3	600	60	870	0,32
Vib-C 1⅜"	Vib-S 1⅜"	35,3	-0,2/+0,3	2	30	375	±10	33,7	41,1	279	10	37,9	550	60	870	0,554
Vib-C 1⅝"	Vib-S 1⅝"	42,3	-0,2/+0,3	2,5	35	430	±10	40,8	49,8	314	10	35,1	509	45	653	0,8
Vib-C 2⅛"	Vib-S 2⅛"	54,3	-0,2/+0,3	2	45	510	±10	51,5	60,4	374	10	27,5	400	40	580	1,104
Vib-C 2⅝"	Vib-S 2⅝"	67,1	-0,2/+0,4	2	66	690	±10	66	78	453	35	24,1	350	35	508	2,58
Vib-C 3⅛"	Vib-S 3⅛"	79,8	-0,2/+0,4	2	66	690	±10	66	78	468	35	22	319	30	435	3,2

Size (metric)		Dimensions (mm)										Max. Working Pressure				Weight
"Vib-C Cu-End"	"Vib-S SS-End"											Vib-C		Vib-S		
		ØA	± tol	B	C	E	± tol	D	F	G	H	bar	psi	bar	psi	kg
Vib-C/M6	Vib-S/M6	6,6	±0,2	1	20	230	±5	6,3	9,9	170	10	44,8	650	60	870	0,052
Vib-C/M8	Vib-S/M8	8,2	±0,2	1	20	230	±5	7,7	11,3	170	10	44,8	650	60	870	0,058
Vib-C/M10	Vib-S/M10	10,2	-0,1/+0,3	1	20	230	±5	10,1	14,4	170	10	44,8	650	60	870	0,064
Vib-C/M12	Vib-S/M12	12,2	-0,1/+0,3	1	20	230	±5	12,2	16,2	150	10	44,8	650	60	870	0,1
Vib-C/M15	Vib-S/M15	15,2	-0,1/+0,3	1	20	255	±5	12,7	17,7	177	10	44,8	650	60	870	0,13
Vib-C/M16	Vib-S/M16	16,2	-0,1/+0,3	1	20	255	±5	15,6	20,8	177	10	44,8	650	60	870	0,138
Vib-C/M18	Vib-S/M18	18,2	-0,1/+0,3	1	25	255	±5	15,6	20,8	179	10	44,8	650	60	870	0,144
Vib-C/M22	Vib-S/M22	22,4	-0,2/+0,3	1,5	25	290	±5	18,8	24,9	204	10	44,8	650	60	870	0,202
Vib-C/M28	Vib-S/M28	28,9	-0,2/+0,3	1,5	25	330	±5	24,6	31,3	244	10	41,3	600	60	870	0,32
Vib-C/M35	Vib-S/M35	35,3	-0,2/+0,3	2	30	375	±10	33,7	41,1	279	10	37,9	550	60	870	0,554
Vib-C/M42	Vib-S/M42	42,3	-0,2/+0,3	2,5	35	430	±10	40,8	49,8	314	10	35,1	509	45	653	0,8
Vib-C/M54	Vib-S/M54	54,3	-0,2/+0,3	2	45	510	±10	51,5	60,4	374	10	27,5	400	40	580	1,104
Vib-C/M64	Vib-S/M64	67,1	-0,2/+0,4	2	66	690	±10	66	78	453	35	24,1	350	35	508	2,58
Vib-C/M76	Vib-S/M76	78,8	-0,2/+0,4	2	66	690	±10	66	78	468	35	22	319	30	435	2,75

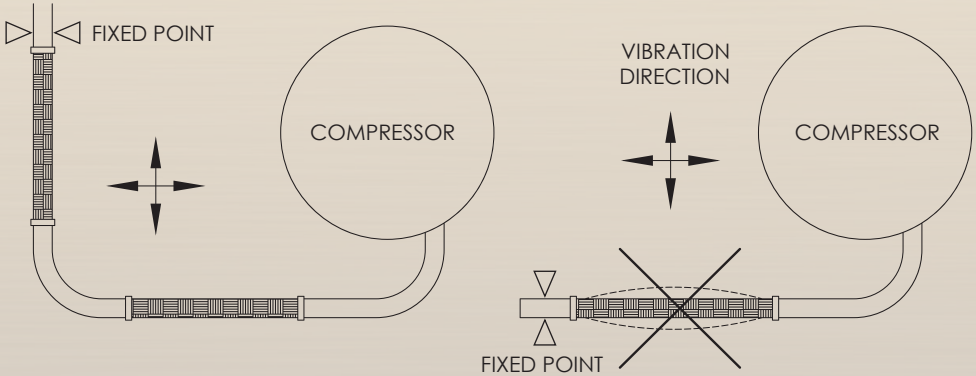
Installation

Hose assembly must be installed to the machine that is the source of high vibration as close as possible. The movement which is the result of the vibration and the bend of the hose must be on the same plate as in the shape that prevents the torsion tension. After completing the hose assembly, hose must be fixed from one end.

Hose assembly must be installed with the right angle to the direction of the vibration.



In cases that the two or three dimensional movements must be absorbed, hoses must be installed with the 90° to each other.



Following points should be considered carefully during the installation;

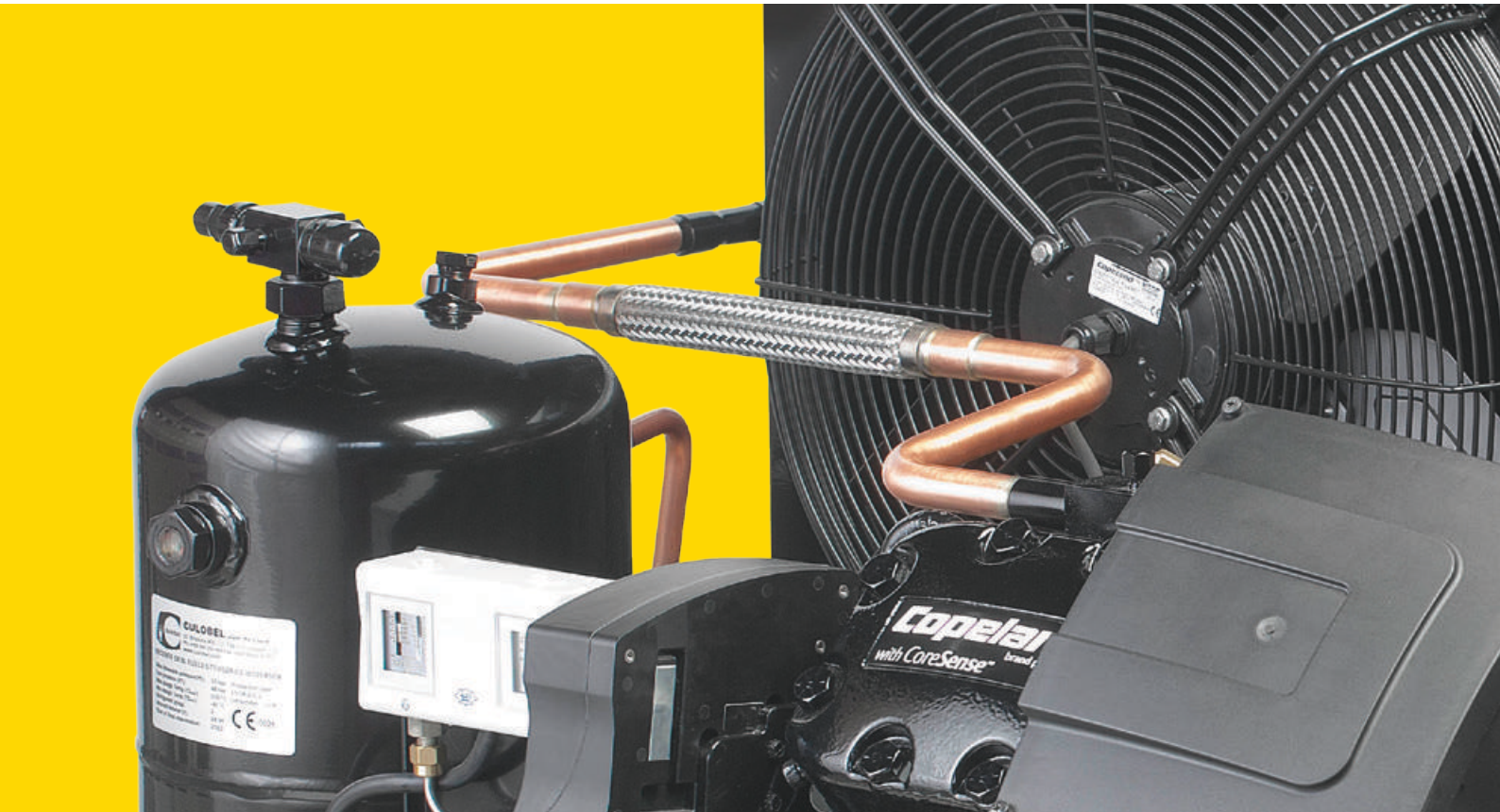
1. The vibration eliminator should be fitted as close as possible to the compressor and must be installed in a straight line. Vibration eliminators are not designed to compensate for pipework misalignment.

2. Care should be taken to allow sufficient space for the vibration eliminator to avoid static compression or tension, after brazing in place. Vibration eliminators are not designed to absorb axial or torsional stress.

3. For optimum absorption of vibration, the refrigerant line should be anchored at the end of the vibration eliminator furthest from the vibration source.

Corrosion Performance:

The selected materials for Vibration Absorber are suitable with the conveyed fluid. Therefore no extra wall thickness is foreseen.



AYVAZ

HEAD OFFICE - FACTORY
Atatürk Sanayi Bölgesi Hadımköy Mahallesi Mustafa İnan Caddesi No: 44 Arnavutköy - İSTANBUL
Tel: +90 212 771 01 45 (pbx) | Fax: +90 212 771 47 27
info@ayvaz.com | www.ayvaz.com

Cona
Caserta/Italy
Tel: +39 0823 187 3988
rmolaro@ayvaz.com

Ayvaz Germany
Viernheim/Germany
Tel: +49 62046014399
germany@ayvaz.com

Ayvaz Ukraine
Kiev/Ukraine
Tel: +380 44 390 57 57
info@ayvaz.com.ua

Tricorr
Warsaw/Poland
Tel: +48 530 030 810
+48 533 603 335
tricorr@tricorr.eu

Haci Ayvaz M.E.
Dubai/U.A.E
Tel: +971 563550822
+971 501306871
mideast@ayvaz.com

Ayvaz China
Cixi City/China
Tel: +86 0574 5897 3851
info@ayvazchina.com

Ayvaz Kazakhstan LLP
Almaty/Kazakhstan
Tel: +7 (727) 327 97 57
info_kz@ayvaz.com
www.ayvaz.kz

Ayvaz N
Isperih/Bulgaria
Tel: +359 8431 27 32
office@ayvaz-n.eu

Ayvaz Serbia
Belgrad/Serbia
Tel: +381 61 658 70 52
yakbiyik@ayvaz.com