

T C M A I R - C E L L

T R A N S F O R M E R C O N S E R V A T O R M E M B R A N E





TAKE A CLOSER LOOK

SEI has more than 20 years of experience in serving the transmission industry and our products are well-known and respected. SEI's TCM Air-Cells can be used inside cylindrical, elliptical, octagonal or rectangular shaped conservator tanks. The TCM Air-Cell floats on oil inside the conservator and expands/contracts by breathing through a flange placed in a customer-specified location, thus allowing the TCM Air-Cell to compensate for oil displacement due to temperature variations in the transformer.



WHO ARE WE?

Since its incorporation in 1978, SEI Industries has focused its expertise on creating solutions most often used by military forces and by exploration, utility, industrial, emergency response and disaster relief industries. SEI has a global agent network with two international offices and seven international repair facilities. Our products are in use in 110 countries around the world.

Over the past 35 years, we've cultivated a unique capability not readily found elsewhere in the world by designing, engineering and manufacturing products from innovative industrial fabrics. These fabrics solve specific problems for customers and provide advantages not available with products made from traditional rigid materials. Our products are typically field-tested by users under extreme conditions and, from those outcomes, product lines have continued to evolve to become some of the best in the world.

Today, SEI operates from a full-service manufacturing facility that houses an impressive collection of industrial equipment including electronic radiofrequency (RF) welding equipment for industrial coated fabrics, metal welding equipment, machining equipment and an in-house fabrics testing laboratory. SEI is ISO 9001:2008 certified and has been ISO certified since 1994.

undesirable elements in the atmosphere, such as water vapour, nitrogen, ozone and oxygen, from transformer oil within a conservator. This barrier also reduces condensation and oxidation inside the transformer and suppresses gas bubble formation in the transformer oil.

specific conservator tank. All SEI TCM Air Cells enable sealed conservator insulating liquid preservation systems to meet IEEE Std C57.12.00-2010 6.6.2. SEI specializes in quick delivery for custom TCM Air-Cells to meet the demands of field service operators.

FABRIC AND DESIGN



Durable, Long-Lasting Fabric

SEI offers a selection of standard TCM sizes. All seams are radio frequency (RF) welded and seam sealed. The TCM Air-Cell is then tested to insure seam strength and a long-term airtight barrier.

TCM Air-Cells are constructed from Temp-Shield[™] 30 oz. (1017 g) urethane elastomercoated nylon fabric that has been specifically designed to be compatible with transformer oils, silicon fluids and bio-degradable transformer oils. The fabric is highly abrasion-resistant and is extremely flexible, ensuring a long-term airtight barrier. Temp-Shield[™] has a high temperature resistance (up to 120 degrees Celsius with spikes to 130 degrees Celsius for a limited time) and can be used in extreme low temperature settings down to -50 degrees Celsius. Temp-Shield's nylon substrate also stretches, offering protection against over pressurization or vacuum during installation.



Superior Design

SEI has numerous standard flanges to fit any conservator. We've also designed our own rotatable flange to ensure easy installations. This rotatable flange can match any fitting and provides a point of entry allowing the TCM Air-Cell to act as a breather. Flanges can be located anywhere to match your particular conservator tank design.

Each TCM Air-Cell comes complete with loops or handles that are used during deployment. These loops are also used to secure the TCM to the conservator tank and we'll place these handles according to your conservator tank design. Each TCM Air-Cell is also individually marked for identification to enable easy inventory tracking.



Quick Turnaround

Your emergency is our emergency. At SEI, we understand the importance of keeping transformers operating and the urgency involved with field repairs. SEI specializes in the quick delivery of custom TCM Air-Cells. When required, SEI can engineer and manufacture a new TCM Air-Cell in as little as 24 hours from an approved drawing or from a customer's tank. And, in most cases, we can have it delivered to your location within three days!

	STANDARD	METRIC	ASTM TEST METHODS	
FABRIC	·			
Total Fabric Weight	30.0 oz/yd²	1017 g/m ²		
Base Fabric Weight	13.0 oz/yd²	440 g/m ²		
Base Fabric / Style	Ny			
COATED FABRIC				
Total Weight	49.0 lbs	22 kg		
Coat Type	0.26 USG	1.0 L	-	
Thickness	32			
MATERIAL PROPERTIES	^			
Max. Operating Temperature	248 °F	120 °C		
Min. Operating Temperature	-58 °F	-50 °C		
Tensile Strength				
Warp/Fill	696/616 lbs/in	600/540 DaN/5 cm	D751	
Peel Adhesion	107 lbs/in	93 DaN/5 cm		
Tongue Tear	44/36 lbs	195/160 N		
Elongation	44%	D751		
Abrasion (per 100 cycles)	3.5 x 10⁻⁵ oz	9.9 x 10 ⁻⁴ g	D3389	
Hydrostatic Resistance	12.7 psig	87 kPa	D751	
Pressure Rating	5.8 psig	40 kPa	D751	
Seam Strength	640/667 lbs/in	560/580 DaN/5 cm	D751	
Permeability to N ₂	4.14 x 10 ⁻¹⁷ (c	D1434		
Permeability to O ₂	5.74 x 10 ⁻¹⁷ (c			
Dielectric Breakdown (Oil)	53.	D1816		
Fungel Resistance			Mil-T-52983G	

F Thank you and thanks to your team for the tremendous efforts to help GE! I greatly appreciate it! SEI has repeatedly come thru to help GE Energy out of jams!



FABRIC SPECIFICATIONS



TCM AIR-CELL SPECIFICATIONS

SEI INDUSTRIES PART NUMBER	COMPETITOR TCM PART NUMBER	EXPANSION VOLUME	LENGTH (A)	LENGTH (B)	LENGTH BETWEEN LUGS (E)
		liters	mm	mm	mm
010931	500-500	500	3035	825	2010
010932	500-600	500	2350	980	1170
010933	750-600	750	3230	980	2050
010934	750-700	750	2620	1140	1280
010935	1000-700	1000	3270	1140	1930
010936	1000-800	1000	2755	1295	1260
010937	1500-800	1500	3745	1295	2250
010938	1500-1900	1500	3215	1455	1560
010939	2000-900	2000	3995	1455	2340
010940	2000-1000	2000	3490	1610	1680
010941	2500-1000	2500	4130	1610	2320
010942	2500-1100	2500	3670	1770	1700
010943	3000-1100	3000	4190	1770	2220
010944	3000-1200	3000	3775	1925	1650
010945	4000-1200	4000	4665	1925	2540
010946	4000-1300	4000	4230	2080	1950
010947	5000-1300	5000	4980	2080	2700
010948	5000-1400	5000	4550	2240	2110
010949	6000-1400	6000	5200	2240	2760
010950	6000-1500	6000	4795	2395	2200



Customized to Meet Your Needs

- SEI can design and manufacture TCM Air-Cells to exact conservator tank size specifications and oil volume levels.
- SEI can design and fabricate custom flanges to meet specific conservator tank designs.
- SEI offers alternate handles or securing tabs to meet bar or hook conservator tank attachment points.





Distribuidor Autorizado:

INGENIERÍA Y PROYECTOS DE LA LAGUNA S.A. DE C.V. Ave. Benjamín Franklin # 142, Col. Escandón, Del. Miguel Hidalgo Ciudad de México, CP 11800, Tel. (0155) 8421-7720 www.ip-lag.com