COMPOSITE TECHNICAL SYSTEMS

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The extraordinary barrier effect against the gas permeability of CTS S.p.A. cylinders

The special PET blend and the design of the internal plastic liner ensure to CTS S.p.A. cylinders a total food compatibility, a total compatibility with a wide range of gases and an extraordinary barrier effect against the gas permeability.

The following chart shows that CTS S.p.A. cylinders' gas permeability is much lower than the minimum gas permeability allowed by the UNI EN 12245 criteria.
As the following data will show, the CTS S.p.A. cylinders exceptional barrier effect is valid and efficient both for pressurized air and for pressurized Hydrogen.

We would like to point out that Hydrogen is the most complicated gas to contain: it is known that Hydrogen molecule is the smallest existing molecule, thus, the difficulties in its containment.

Tab.: Gas permeability results comparing
UNI EN 12245 allowed permeability VS CTS S.p.A. cylinders permeability

Cylinder model	BREATHING AIR (data after 28 days according to UNI EN 12245)			HYDROGEN (data after 28 days according to UNI EN 12245)		
	Max allowed permeability [gr]	CTS cylinder permeability [gr]	RESULT	Max allowed permeability [gr]	CTS cylinder permeability [gr]	RESULT
2.0 lt 300 bar	0.48	0.15	OK	0.24	0.06	OK
3.0 lt 300 bar	0.72	0.22	OK	0.36	0.09	OK
6.0 lt 300 bar	1.44	0.44	OK	0.73	0.18	OK
6.8 lt 300 bar	1.63	0.50	OK	0.82	0.20	OK
7.2 lt 300 bar	1.73	0.53	OK	0.87	0.21	OK
9.0 lt 300 bar	2.16	0.66	OK	1.09	0.26	OK

The above data proves that the CTS S.p.A. cylinder gas permeability is very lower than the UNI EN 12245 allowed gas permeability.
So we can say that the CTS S.p.A. cylinders own an extraordinary barrier effect against the gas permeability.