

# ALL-COMPOSITE

## 55% less weight: for breathing apparatus the lightest solution with unlimited lifetime

### Best performance

As the leading manufacturer of cylinders and pressure vessels in Europe, MCS International GmbH pursues innovative material and manufacturing technologies. The patented combination of fibre material and plastic liner results in a considerable weight reduction of 55% compared to a conventional 300/450 bar steel cylinder designed to EEC Directive.

A 6.8 l 300/450 bar full composite cylinder weighs only about 3.6 kg. In addition, with reference to the weight of a conventional steel cylinder, 120% more breathing air can be transported. Our products are certified to the type approval Directive 97/23/EEC. (PED and CE sign)

### Most significant advantages of MCS all-composite cylinders

- lowest weight at highest pressure!
- best performance (for example 3,6 kg/6,8 Ltr.)
- plastic liner ensures complete exclusion of corrosion
- unlimited life according to EN 12 245
- maximum carrying comfort
- patented impact protection for shoulder and base
- high fatigue resistance
- high load-bearing capacity with burst pressures averaging 1200 bar

Our products are certified to the type approval Directive 97/23/EEC. (PED and CE sign)

### Highest safety to EN 12 245

The safety of this innovative all-composite cylinder has been proven under extreme conditions by tests and trials carried out within the type approval procedure according to the latest ISO and CEN Standard Drafts. Fire, climate chamber, drop and bullet tests document the safety reserves of this cylinder.

### Important approval tests

- Burst test
- Fatigue test
- Environmental test
- Drop test
- Flaw test
- Bullet test
- Bonfire test
- Gas cycling test
- Permeability test
- Salt water immersion

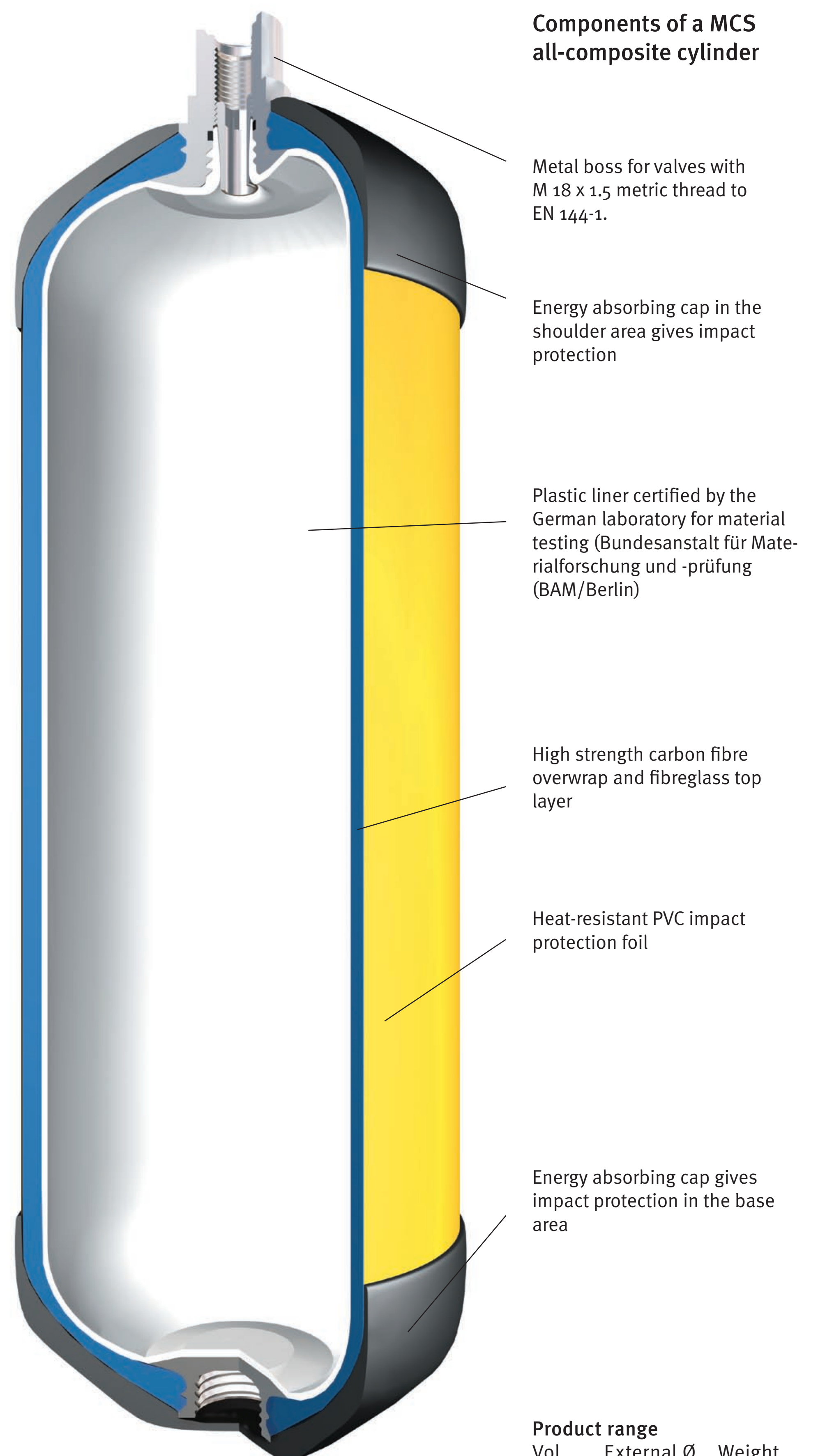
All tests were passed with success (according to EN 12 245).

### Retesting

As a result of the high product quality a simple hydraulic pressure test suffices for periodic retesting.

It is not necessary to conduct the technically extensive and costly water jacket test on MCS International GmbH all-composite cylinders.

### Components of a MCS all-composite cylinder



Metal boss for valves with M 18 x 1.5 metric thread to EN 144-1.

Energy absorbing cap in the shoulder area gives impact protection

Plastic liner certified by the German laboratory for material testing (Bundesanstalt für Materialforschung und -prüfung (BAM/Berlin))

High strength carbon fibre overwrap and fibreglass top layer

Heat-resistant PVC impact protection foil

Energy absorbing cap gives impact protection in the base area

### Product range

Vol.	External Ø	Weight
4 l	133 mm	2,2 kg
4,7 l	133 mm	2,5 kg
6 l	157,2 mm	3,1 kg
6,8 l	157,2 mm	3,6 kg
9 l	176 mm	4,3 kg



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