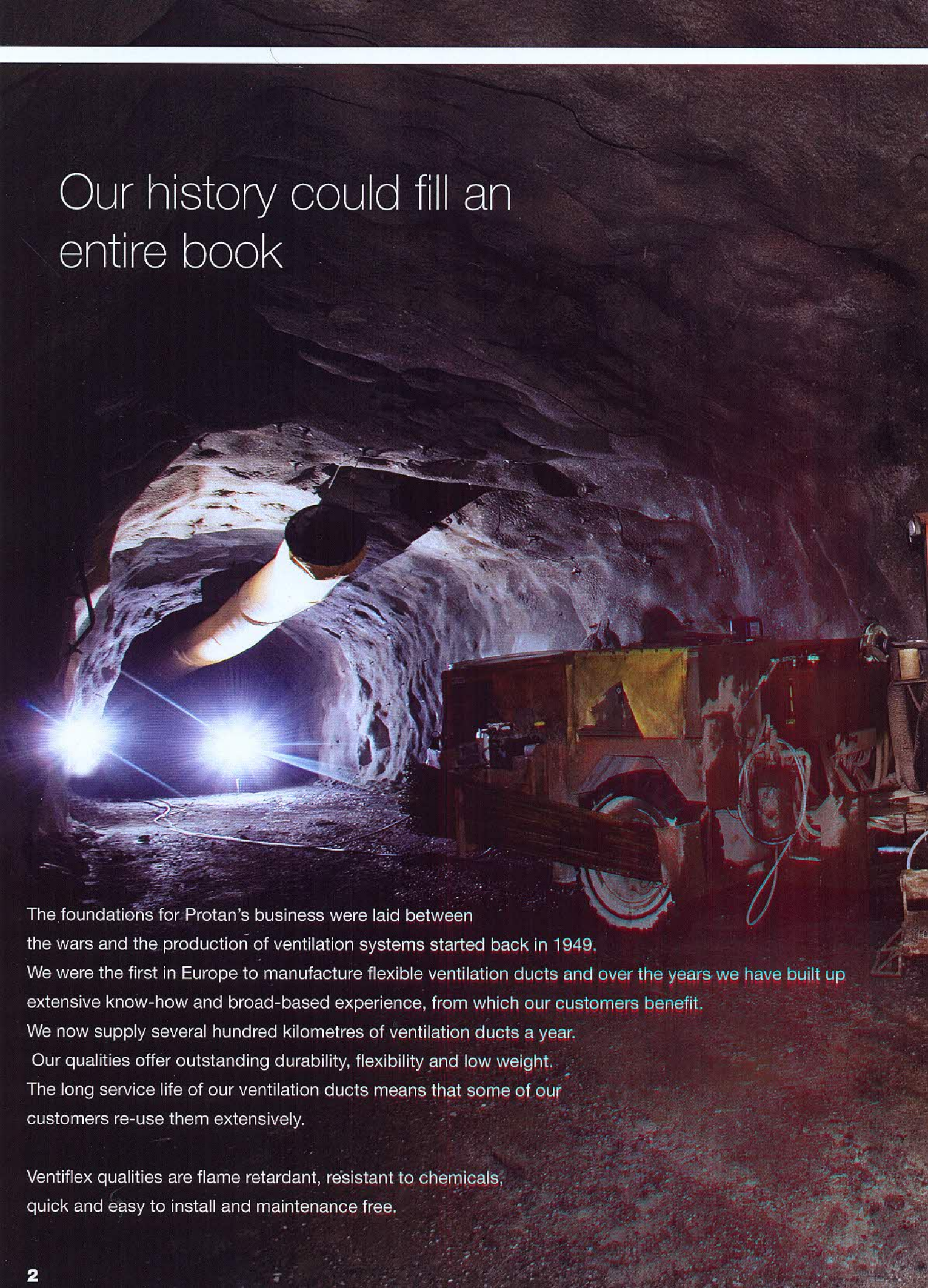


The art of  
transporting  
fresh air  
into mines  
and tunnels



**Ventiflex**



# Our history could fill an entire book

The foundations for Protan's business were laid between the wars and the production of ventilation systems started back in 1949. We were the first in Europe to manufacture flexible ventilation ducts and over the years we have built up extensive know-how and broad-based experience, from which our customers benefit. We now supply several hundred kilometres of ventilation ducts a year. Our qualities offer outstanding durability, flexibility and low weight. The long service life of our ventilation ducts means that some of our customers re-use them extensively.

Ventiflex qualities are flame retardant, resistant to chemicals, quick and easy to install and maintenance free.



**The Ventiflex system is a world leader.**

We have supplied ventilation systems to mines and tunnels on all the world's continents and offer local distribution in many countries. We carry out exhaustive checks and quality control on all our systems before they are delivered. Protan is a driving force in the development of ventilation systems in mines and tunnels and a member of the ITA-AITES through the Norwegian Tunnelling Society.



**More than just ventilation.**

Protan is Scandinavia's leading manufacturer of technical textiles and PVC roofing. Our head office and largest production facility are in Drammen, about 40 kilometres southwest of Oslo. At our fabrication plant in Nesbyen we make welded and customised products, tailored to our customers' requirements.

# Fittings that count

Burst pressures for Ventiflex, safety factor n=1

Diameter [mm]	6212FR	6298FR	6698FR	7198FRAS	7111FRAS
200	366 000	420 000	520 000	436 000	400 000
300	244 000	280 000	346 667	290 667	266 667
400	183 000	210 000	260 000	218 000	200 000
500	146 400	168 000	208 000	174 400	160 000
600	122 000	140 000	173 333	145 333	133 333
700	104 571	120 000	148 571	124 571	114 286
800	91 500	105 000	130 000	109 000	100 000
900	81 333	93 333	115 556	96 889	88 889
1000	73 200	84 000	104 000	87 200	80 000
1100	66 545	76 364	94 545	79 273	72 727
1200	61 000	70 000	86 667	72 667	66 667
1300	56 308	64 615	80 000	67 077	61 538
1400	52 286	60 000	74 286	62 286	57 143
1500	48 800	56 000	69 333	58 133	53 333
1600	45 750	52 500	65 000	54 500	50 000
1700	43 059	49 412	61 176	51 294	47 059
1800	40 667	46 667	57 778	48 444	44 444
1900	38 526	44 211	54 737	45 895	42 105
2000	36 600	42 000	52 000	43 600	40 000
2100	34 857	40 000	49 524	41 524	38 095
2200	33 273	38 182	47 273	39 636	36 364
2300	31 826	36 522	45 217	37 913	34 783
2400	30 500	35 000	43 333	36 333	33 333
2500	29 280	33 600	41 600	34 880	32 000
2600	28 154	32 308	40 000	33 538	30 769
2700	27 111	31 111	38 519	32 296	29 630
2800	26 143	30 000	37 143	31 143	28 571
2900	25 241	28 966	35 862	30 069	27 586
3000	24 400	28 000	34 667	29 067	26 667
3100	23 613	27 097	33 548	28 129	25 806
3200	22 875	26 250	32 500	27 250	25 000

Y piece



Branch



Tee



Bend



Adapter,  
fan section,  
nozzle



Multi-directional  
details



Subject to changes

**Fittings.** We offer Y pieces, tees, bends, branches, adapters, fan sections and nozzles in standard versions in all diameters, and also customise fittings on the basis of drawings.

**Eyelets.** We use plastic eyelets, which are stronger than brass eyelets. The eyelets have a standard spacing of 0.5 metres, which provides optimum flexibility during installation.

**Suspension rib.** A strong rib that runs along the length of the ducting and is welded on.

**Duct qualities**

Ventiflex is made in various thicknesses of fabric for different pressures and requirements. We supply diameters of 200 – 3000 mm and lengths of 10 – 500 m.

- Ventiflex 6212FR
- Ventiflex 6298FR
- Ventiflex 6698FR
- TWO 7111FRAS

We also have one antistatic quality:  
Ventiflex 7198FRAS



**Zip coupling:**

Simple assembly. Flexible, quick and easy to store.



**Velcro coupling:**

Simple assembly and disassembly. Flexible, quick and easy to store.



**Ventiflex**

**VF coupling:**

User-friendly steel coupling with steel ring welded in and VF compression ring on outside.



**Ventiflex**

**LP coupling:**

Basically the same as the VF coupling, but stronger. Available with nut for tightening by machine.



**Shaft ducting.**

Shaft ducting comes with steel wires and turn-buckles fitted and with two, three or four suspension ribs, as required.

**Hooks.** Ducts come with one hook per metre as standard.



**VF hook:**

Standard hook. Height to suspension wire can be adjusted by a soft steel wire fitted to the hook.



**LP hook:**

Attaches straight onto the wire. Simple and quick to fit.



**Snap hook:**

Attaches straight onto the wire. Simple and quick to fit.



**S hook:**

Quick-release solution.

# Ventiflex Duo

Protan Ventiflex Duo is a concept that has been developed for use in installations with limited headroom. With its two separate ducts hanging from the same wire, it is both simple and reliable.

The most important advantages of Ventiflex Duo are as follows:

1. A larger cross-section means lower energy consumption for the fan with the same installation height and volume of air
2. More air to the face than with the same fan output
3. No intermediate walls that might cause problems with ruptures, vibrations, etc.
4. Two separate ducts that can function independently
5. Secure couplings with very low friction
6. Protan Ventiflex Duo can be installed very close to the tunnel roof because the suspension system is placed between the ducts.



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