SIGRACET®
GDL 34 & 35 Series Gas Diffusion Layer

GDL 10
GDL 34	**GDL 35**
GDL 24	GDL 25
Foils
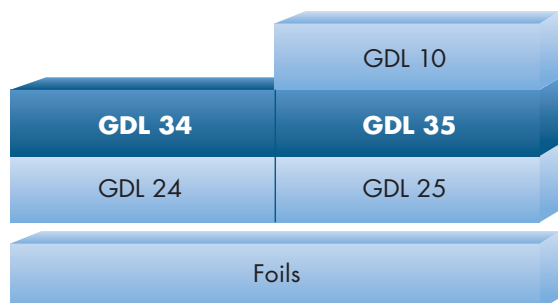
After the introduction of our 300-micron thick GDL series GDL 30/31, SGL Group has been further improving the series with respect to production yield and product variability. We have introduced our newest grades, GDL 34 and GDL 35, to the commercial market. SGL Group has invested heavily in this product development and has been contributing resources from a number of different and cross-functional parts of the organization. The result has been the launch of our new grades GDL 34/35.

Users have confirmed the excellent match of the properties:
- Greatly improved homogeneity inter-lot and intra-lot. The overall variability has been shown to be better than +/- 10% (2 sigma)

- Greatly improved surface flatness
- Greatly reduced occurrence of faulty spots on a roll
- Greater roll length
- Best performance under various operating conditions

The above list is not sacrificing any of the list of properties which makes SGL Group's GDL unique:
- Produced and shipped as a continuous roll good
- Utilizing low-cost nonwoven processes
- Hydrophobic treatment of the substrate to the desired level by coating the bulk surfaces with PTFE
- Coating of material grades with SGL Group's unique microporous layer for better membrane contact, water management and mechanical protection
- Concept of lower and higher porosity (GDL 34: lower, GDL 35: higher porosity) to react with cell humidity level.

The introduced product series GDL 34/35 is intended to combine the required production robustness and the excellent performance properties. Stack developers and assemblers are benefiting from the greatly improved characteristics.

Properties of SIGRACET® GDL 34/35

Property	Unit	GDL 34 BA	GDL 34 BC	GDL 35 BA	GDL 35 BC
Thickness ▲	mil	11.0	12.4	11.8	12.7
	µm	280	315	300	325
Areal Weight	oz/ft^2	0.28	0.46	0.18	0.36
	g/m^2	86	140	54	110
Porosity	%	83	75	90	80
Air Permeability ■	cm^3/(cm$^2 \cdot$ s)	45	0.35	170	1.5
Electrical Resistance (through plane) ●	mΩcm^2	< 11	< 14	< 12	< 15

▲   Under 0.25 N/cm^2, sample diameter 13 mm
■   Gurley model 4118, 300 cc, 0.1 sq in orifice
●   2-point measurement, circular (25 mm diam.) gold-plated contacts under pressure of 10 bar

Broad Base. Best Solutions.

SGL GROUP
THE CARBON COMPANY

Grades

We supply SIGRACET Gas Diffusion Layers in roll form in lengths of 75 +/– 25 m. Our standard roll width is 45 cm, but we can split parent rolls into multiples thereof, i. e. 2 x 22.5 cm wide rolls, 3 x 15 cm wide rolls, etc. Sheets stamped to a specified geometry are also available if so desired. Substrate PTFE loadings are available from 0 to 30 wt%, but 5 wt% is standard.

AA	YA	YC

Y	A	B	C	D	E
% PTFE	0	5	10	20	30

By courtesy of Viessmann

GDL "AA" is our plain substrate with no value-added post-processing.
GDL "BA" is our hydrophobized substrate with a 5 wt% PTFE loading.
GDL "BC" is our hydrophobized substrate (5 wt% PTFE) with our standard Microporous Layer (MPL) on one side.

By courtesy of P21

Unique Characteristics

Our GDL 34/35 nonwovens are of a 2-dimensional structure designed to have lower thickness, higher bending stiffness, lower compression set, and lower compressibility than GDL 10.
GDL 34/35 has also greatly improved tolerances (thickness and areal weight) and a lower anisotropy factor between the machine and transverse directions.

On request, we will advise you on maximum compression loads for use in bonding to Catalyst-Coated Membranes (CCMs) or assembling stacks. Gasket design also needs to take the compression behavior into account.

SGL GROUP
THE CARBON COMPANY