CHAPTER 7

COMMONLY USED RIGID GAS PERMEABLE LENS DESIGNS IN SOUTH AFRICA COURTESY OF THE CONTACT LENS LABORATORY OF SOUTH AFRICA

Many lens designs have been employed to fit the regular and irregular cornea, some are more complex than others. However, some basic parameters are always described when ordering lenses. These generally include the lens diameter, number of curves, base curve radius as well as the radii of the secondary curves and peripheral curve, optic zone diameter, diameter of the secondary zones, lens centre thickness, specific lens design and if the lens is aspheric the eccentricity or *e*-value. It is important to remember that the *e*-value of a contact lens is not the same as that of the cornea. The limit of the optic zone or starting point of the 2nd curve is the starting point of the eccentric curve and not the centre of the lens. The following diagram illustrates the meaning of some of the terms used to describe an RGP lens design.

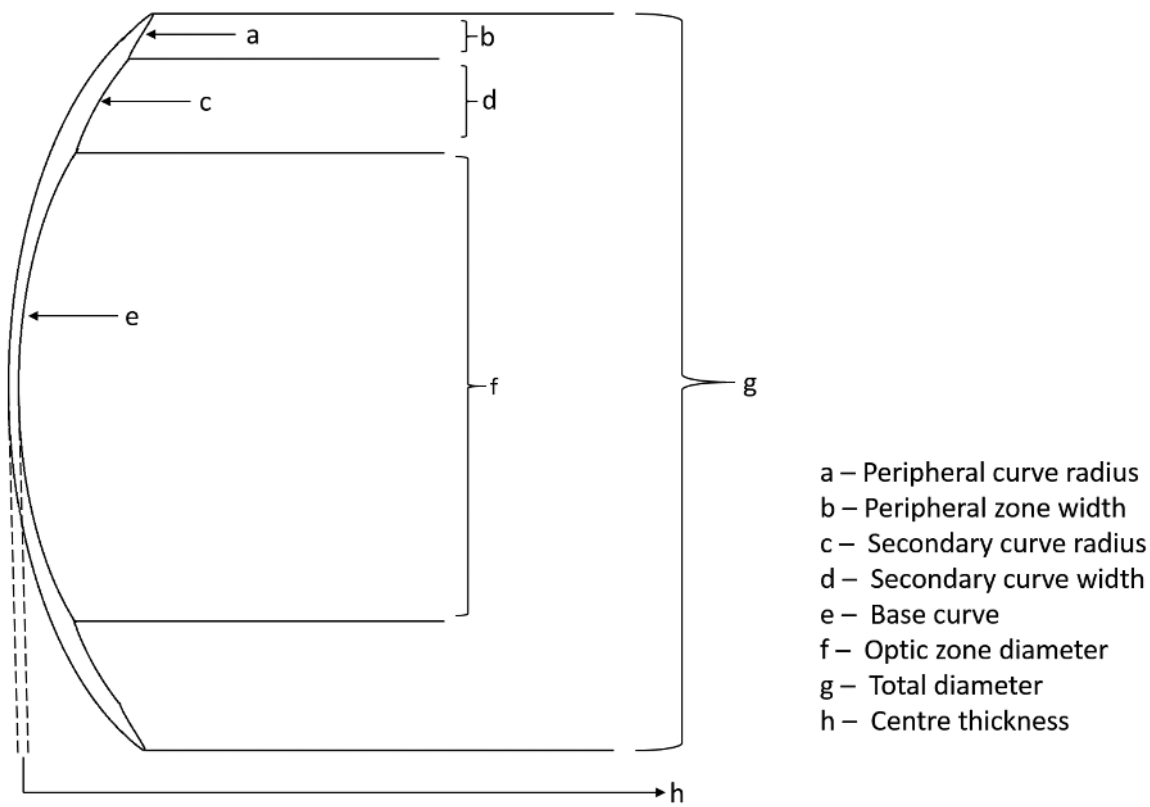

Figure 32: The anatomy of an RGP corneal lens

Table 19: RGP corneal lens designs commonly used in South Africa (The Contact Lens Laboratory of SA)

Design	Base curve/ BC	Optic Zone Diameter/ OZD	2nd Curve/ Diameter		3rd Curve/Diameter		4th Curve/ Diameter		Peripheral curve/PC	Overall Diameter/ OD
Multiflo²	7.00–9.00	8.0	9.00 "B"	8.60					10.50	9.20
C2	4.5–16.00	Any							>1.00	7.5–12.00
C3 9.20 Diameter	7.00–9.00	7.20	BC +0.50	8.60					10.50	9.20
C3 8.80 Diameter	5.00–7.20	6.20	BC +0.70	8.10					12.25	8.80
C4 9.50 Diameter	7.00–9.00	7.20	BC +0.80	8.00	2nd C +0.50	8.90			11.00	9.50
C4 10.00 Diameter	7.00–9.00	8.20	BC +0.80	8.80	2nd C +0.50	9.40			BC +4.00	10.00
K4	5.00–7.20	7.5	BC +0.60	8.20	2nd C +0.60	9.00			10.00	9.80
K5	5.00–7.00	7.00	BC +0.80	7.60	2nd C +0.50	8.20	3rd C +0.50	8.90	12.25	9.50
CLEK K3	7.18–4.82	5.5–7.00	BC +1.1–3.2 depending on BC		2nd C +2.75–3.00 depending on BC				11.00/0.2 wide	8.60
Keratocon	6.10–7.20	OD -0.8	BC +0.8	OD -0.60	BC +1.30	OD -0.80			BC +4,00	9.0–10.00
LDL C3	7.0–10.00	7.5–9.00	BC +0.85	OD -0.60					BC +3.75	9.5–11.00
Reverse Geometry	7.85–8.96	6.50–7.20	Reverse curve BC -0.80	OD -1.70	Alignment curve BC +0.20	OD -0.30			12.25	10.00–10.50
Rose K	4.6–7.6	Similar to base curve	Unknown						Std or Flat	8.7
Asticon or Ts/c	7.0–10.00	7.20/8.20	Steep meridian BC +0.25 Flat meridian BC +0.75	8.80					10.50	9.20–9.40
Toric base curve	On flat K +1/3 Steeper than flat K	7.20	BC +0.50	8.90					10.50	9.2/9.50
Aspheric X	7.20–8.30	6.00	e-value	10.10					12.00	10.50
Aspheric Y	5.00–8.40	6.00	e-value	9.40					9.80	9.80
PCG	7.10–10.00	8.20	Reverse curve BC -0.90	10.50	Alignment curve BC +0.90				11.00	12.00