

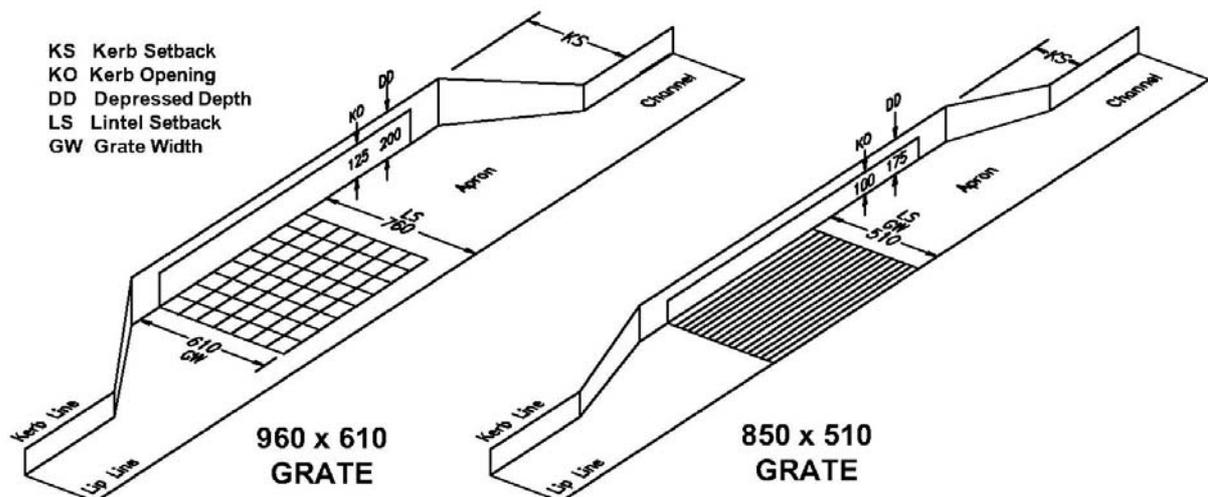
PEDESTRIAN SAFETY

INTRODUCTION

Where a grate is wider than the channel then it will intrude into either the pavement or the footpath or both. Pavement intrusion has long been accepted as normal but in recent years designs have appeared eliminating pavement intrusion by pushing the pit back so that its outer wall aligns with the lip of the channel creating an intrusion into the footpath. Such designs are called lip-in-line inlets. For a grate aligned with the inside of a 150mm pit wall the grate is pushed back to 150mm behind the lip line. An alternative arrangement is to align the edge of the grate with the channel lip which allows lintel setback *LS* and therefore the kerb setback *KS* to be reduced by some 150mm. Typical arrangements are shown below.



IPWEA Dwg D-0060 Inlet



KERB SETBACK AND DEPRESSION

Setback *KS* is without doubt a hazard for pedestrians exposing them to a sudden and unexpected drop *DD* on or too close to possible paths of travel. Lip-in-line configurations have resulted in damages claims based on a contention the design exposes pedestrians to risks that constitute an unacceptable hazard. For that reason designs that reduce kerb setback and the depressed depth are to be preferred. This is best achieved firstly by reducing the width of grate *GW*, secondly by placing the edge of the grate on the lip line and thirdly by reducing the kerb opening height, *KO*. Dimensions for some commonly available inlets are set out below



BCC UMS 330 Inlet

IPWEA INLET Dwg D- 0063

Setback SB = 760mm. For 300mm channel KS = 460mm; for 450mm channel KS = 310mm and for mountable kerb KS = 210mm. Depressed depth DD = 200mm.

BCC INLET Dwg UMS 330

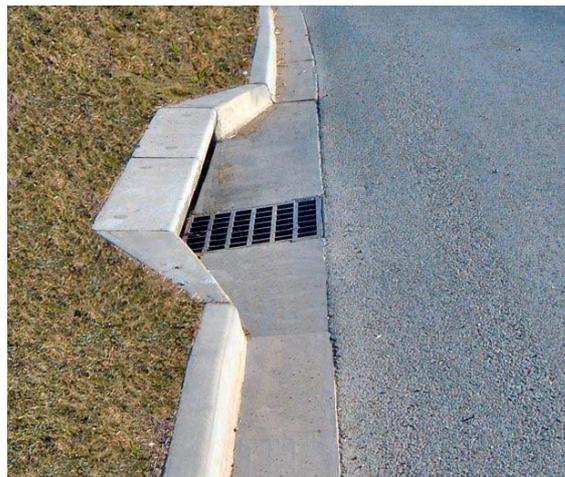
Setback SB = 676mm. For 300mm channel KS = 376mm; for 450mm channel KS = 226mm and for mountable kerb KS = 126mm. Depressed depth DD = 200mm.

DRAINWAY PLUS INLETS

Setback SB = 610mm. For 300mm channel KS = 310mm; for 450mm channel KS = 160mm and for mountable kerb KS = 60mm. Depressed depth DD = 175mm.

STORMWAY INLETS

Setback SB = 510mm. For 300mm channel KS = 210mm; for 450mm channel KS = 60mm and for mountable kerb the lintel is 40mm in front of the flat section of the kerb. Depressed depth DD = 175mm.



Drainway Inlet

The four inlets are compared in Table 1.

TABLE 1

| PARAMETER | IPWEA DWG D-0063 960x610 GRATE | BCC UMS 330 930x676 GRATE | DRAINWAY PLUS 610x610 GRATE | STORMWAY 850x510 GRATE |
|-------------------------------|---|------------------------------------|--------------------------------------|------------------------------|
| Grate behind lip line | 150 | nil | nil | nil |
| Lintel setback | 760 | 676 | 610 | 510 |
| Kerb setback - mountable | 210 | 126 | 60 | nil |
| Kerb setback - barrier 450 ch | 310 | 226 | 160 | 60 |
| Kerb setback - barrier 300 ch | 460 | 376 | 310 | 210 |
| Depressed Depth | 200 | 200 | 175 | 175 |

Note: mountable setback is measured from the front edge of the flat section.

SAFE GRATES

AS 3996 Clause 3.3.3 requires that the slot width should be ≤25mm and notes that smaller slot widths may be desirable. Dwg D-0063 and Dwg UMS 330 inlets normally have slot in the range 50 – 90mm. Manning grates for Stormway and Mannflow grates for Drainway systems have slot widths of 17mm, more than satisfying AS 3996.

CONCLUSION

Stormway inlets are markedly more pedestrian safe than other inlets as regards kerb line setback, with Drainway the next best - particularly so with barrier kerb and channel. Stormway inlets with the Manning grate and Drainway inlets with the Mannflow grate, each with slot widths of 17mm, are standout choices for the CBD, carparks, townhousing and residential areas.



Stormway Inlets with Manning grates