

SPECIFICATION FOR CATCH BASIN INSERT

PART 1-PRODUCT

1.1 GENERAL:

- 1.1.1** The catch basin insert must be able to fit reasonably tight to the catch basin and shall be square and vertically upright within it once placed. A top sloped plate shall direct flows toward the rear of the catch basin where the majority of flow shall be directed across a grate to allow sediment to drop out, with flows exiting at the outlet pipe of the catch basin.
- 1.1.2** The insert shall be supported by a “leg” that in turn supports the grate and top slope. The leg will be telescopic, allowing adjustment of the grate to be equal with the invert of the outgoing pipe from the catch basin.
- 1.1.3** The telescopic leg shall allow for adjustments in sump depths from 150 to 900 mm.
- 1.1.4** The catch basin insert must be easily removed to allow maintenance of the catch basin.
- 1.1.5** The insert should be fabricated from either fiberglass or co-polymer polypropylene.
- 1.1.6** The insert shall not include a flow through membrane to trap sediment.

1.2 FIBERGLASS:

A fiberglass insert should be fabricated in accordance with the following standard: ASTM D-4097: Contact Molded Glass Fiber Reinforced Chemical Resistant Tanks

1.3 CO-POLYMER POLYPROPYLENE:

A co-polymer polypropylene insert shall conform to a tensile strength of 4000 psi (ASTM D-683), an Izod impact value of 2.5 (ASTM D-792), a flexural modulus of 195000 (ASTM D-790) , A heat distortion temperature of 190° F (ASTM 648) and a Rockwell hardness of 74 (ASTM D-785)

1.4 FASTENERS:

The insert parts shall be fastened together with stainless steel hardware Grade 304 or 316.

PART 2 – PERFORMANCE

2.1 GENERAL

The catch basin insert shall facilitate removal of sediment from stormwater by settling in the catch basin sump during frequent rain and snowmelt events. The insert shall prevent re-suspension of captured material during higher flow events, with sediment to remain in place until suitably removed with appropriate catch basin cleaning equipment. The insert shall not impede flows through the catch basin, and shall not be prone to blockage.

2.2 TOTAL SUSPENDED SOLIDS and PARTICLE SIZE DISTRIBUTION:

- 2.2.1** The catch basin insert shall enhance and not impede the catch basin’s ability to capture sediment. Depending on site conditions, the system shall generally be capable of capturing and retaining a long term average of 50% to 60% of incoming total suspended solids (TSS) loading. Sediment/TSS removal calculations shall be based on the particle size distribution associated with the ETV Canada definition of test sediment as outlined in their protocol for testing of Oil Grit Separator type devices.

- 2.2.2** The catch basin insert performance shall be determined through independent laboratory testing with protocols based on (and in general conformance with) the Canadian ETV program's protocol for TSS removal and scour for Oil Grit Separator type devices (as authored by Toronto Region Conservation Authority, revised June 2014).
- 2.2.3** Alternative long term removal rates associated with assuming a different PSD for incoming TSS (such as for sediment consistent with the City of Toronto's Wet Weather Flow Management Guidelines) will be provided by CB Shield Inc. if assumed in design calculations.

2.3 SITE SPECIFIC DESIGN AND PERFORMANCE

- 2.3.1** The catch basin insert shall enhance a catch basin's ability to capture TSS, with actual long term sediment removal performance based on the drainage area required for treatment and the level of imperviousness. ,
- 2.3.2** The anticipated long term TSS removal performance for site specific installations shall be determined and stamped by a licensed engineer.
- 2.3.3** For a **double catch basin**. There will be two standard CB Shield inserts and one center spacer installed. The first insert is installed with the high part of the slope facing the outlet hole. The center spacer complete with foot is then installed directly below the double catch basin center beam. The second insert is installed in the section that does not have an outlet pipe. This insert will have the high point of the slope face either 90 or 180 degrees away from the outlet pipe.

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