ACO KlassikDrain K300/KS300

Subassembly Installation and Reference Guide

User Guide for Autodesk AutoCAD Civil 3D files

Contents

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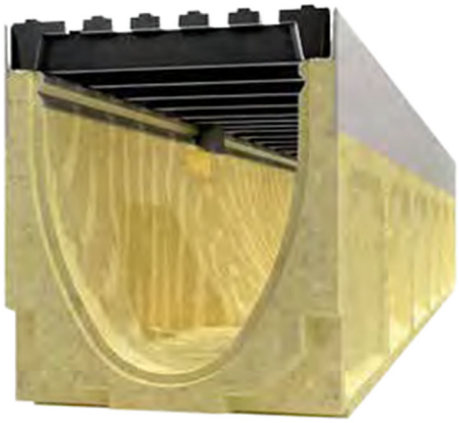
1. Introduction

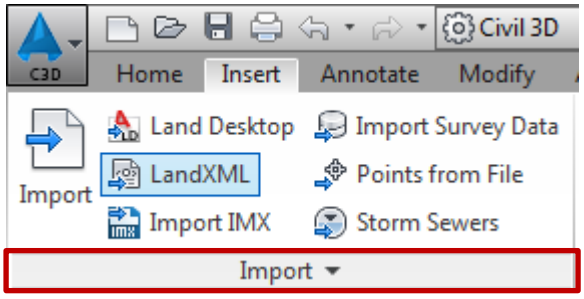
This document describes the installation, configuration and use of the ACO KlassikDrain subassembly component for AutoCAD Civil 3D 2022.



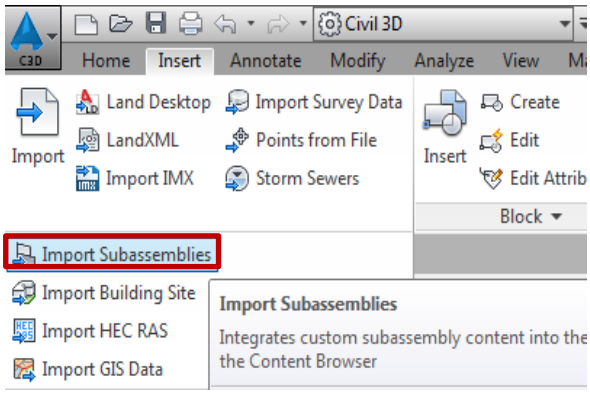
2. Installing the ACO KlassikDrain subassembly

The KlassikDrain sub-assembly is available as a .pkt file which contains the subassembly .dll file and associated configuration files for installing the subassembly in Civil 3D.

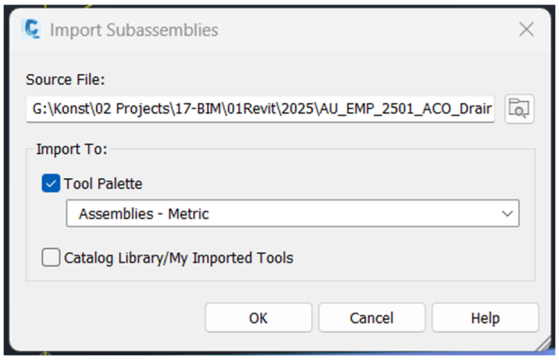
To install the subassembly, click on the Import panel title on the Insert ribbon.

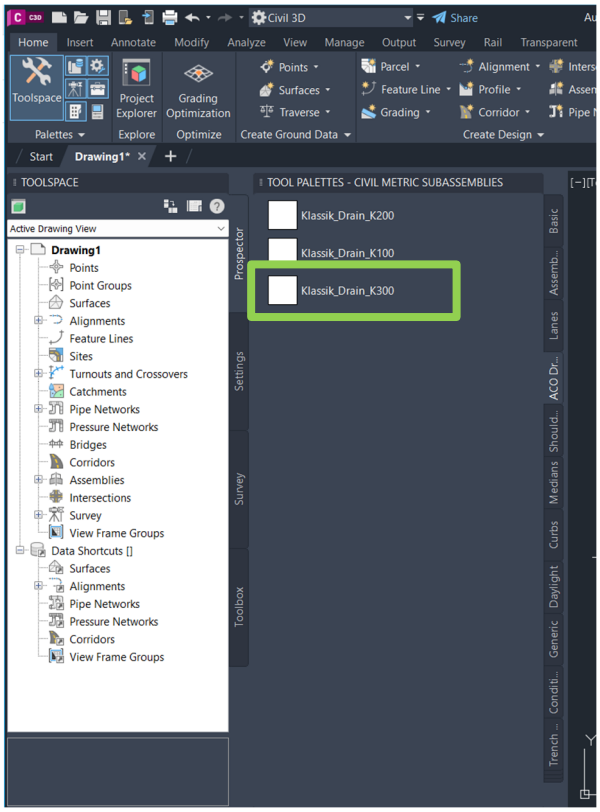


Choose import subassemblies



Browse the location of the ACO KlassikDrain K300/KS300.pkt file, and choose a tool palette to import to, or create a new palette. The subassembly can also optionally be added to the user Catalog Library. The tool palette in civil 3D will now show the ACO KlassikDrain K300/KS300 subassembly. Note that by right-clicking in the tool palette, the palette can be customized by creating a separate item for the ACO KlaasikDrain K300/KS300, as shown here.



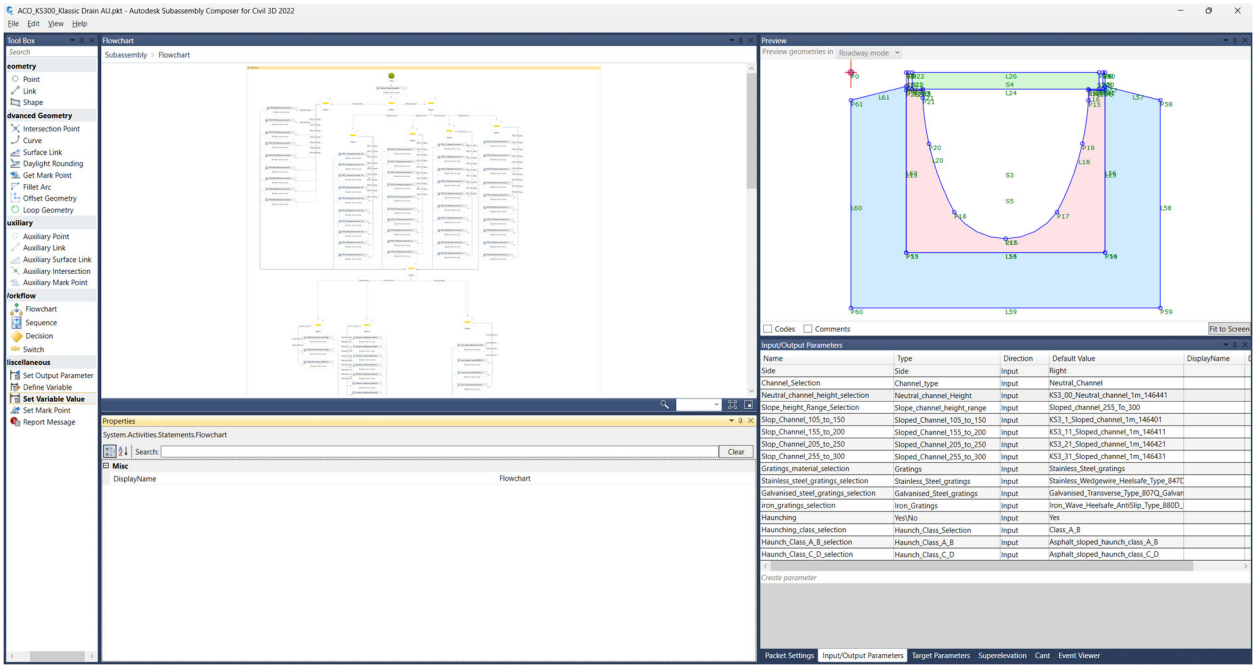


3. Using the ACO KlassikDrain K300/KS300 subassembly

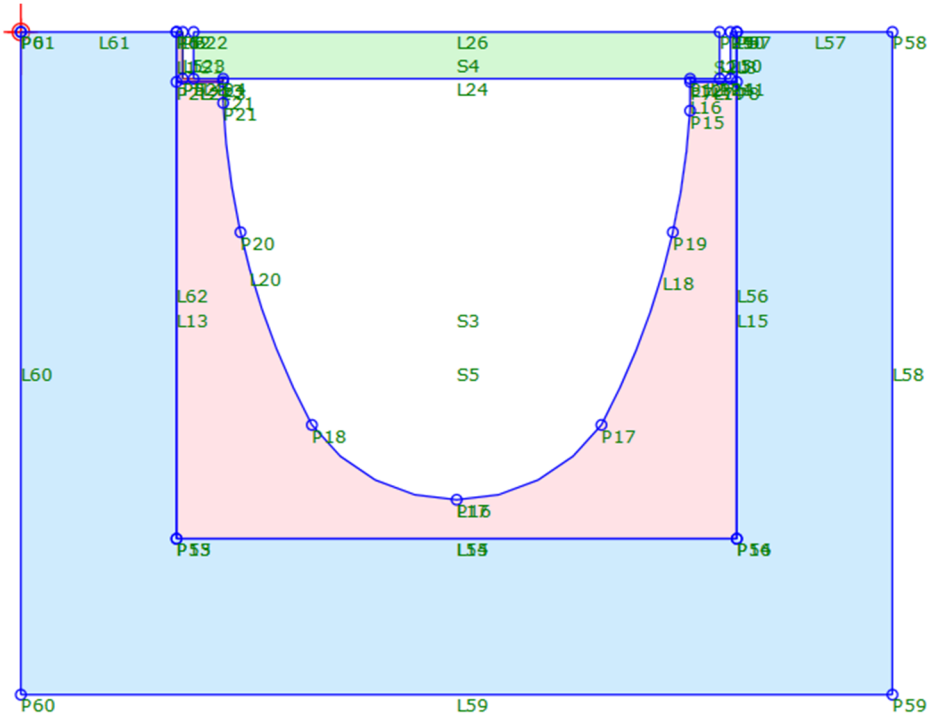
The ACO KlassikDrain subassembly includes definitions for the following Edge rail type:
KlassikDrain K300/KS300 with Edge rail types:-

K300 / KS300 Parts table

Channels and Accessories	Part No.	
	K300	KS300
K3-00 Neutral channel - (1m)³	146041	146441
K3-1 Sloped channel - (1m)	146001	146401
K3-2 Sloped channel - (1m)	146002	146402
K3-3 Sloped channel - (1m)	146003	146403
K3-4 Sloped channel - (1m)	146004	146404
K3-5 Sloped channel - (1m)³	146005	146405
K3-6 Sloped channel - (1m)	146006	146406
K3-7 Sloped channel - (1m)	146007	146407
K3-8 Sloped channel - (1m)	146008	146408
K3-9 Sloped channel - (1m)	146009	146409
K3-10 Sloped channel - (1m)³	146010	146410
K3-010 Neutral channel - (1m)³	146043	146443
K3-0103 Neutral channel - (0.5m)³	146044	146444
K3-11 Sloped channel - (1m)	146011	146411
K3-12 Sloped channel - (1m)	146012	146412
K3-13 Sloped channel - (1m)	146013	146413
K3-14 Sloped channel - (1m)	146014	146414
K3-15 Sloped channel - (1m)³	146015	146415
K3-16 Sloped channel - (1m)	146016	146416
K3-17 Sloped channel - (1m)	146017	146417
K3-18 Sloped channel - (1m)	146018	146418
K3-19 Sloped channel - (1m)	146019	146419
K3-20 Sloped channel - (1m)³	146020	146420
K3-020 Neutral channel - (1m)³	146045	146445
K3-0203 Neutral channel - (0.5m)³	146046	146446
K3-21 Sloped channel - (1m)	146021	146421
K3-22 Sloped channel - (1m)	146022	146422
K3-23 Sloped channel - (1m)	146023	146423
K3-24 Sloped channel - (1m)	146024	146424
K3-25 Sloped channel - (1m)³	146025	146425
K3-26 Sloped channel - (1m)	146026	146426
K3-27 Sloped channel - (1m)	146027	146427
K3-28 Sloped channel - (1m)	146028	146428
K3-29 Sloped channel - (1m)	146029	146429
K3-30 Sloped channel - (1m)³	146030	146430
K3-030 Neutral channel - (1m)³	146047	146447
K3-0303 Neutral channel - (0.5m)³	146048	146448
K3-31 Sloped channel - (1m)	146031	146431
K3-32 Sloped channel - (1m)	146032	146432
K3-33 Sloped channel - (1m)	146033	146433
K3-34 Sloped channel - (1m)	146034	146434
K3-35 Sloped channel - (1m)³	146035	146435
K3-36 Sloped channel - (1m)	146036	146436
K3-37 Sloped channel - (1m)	146037	146437
K3-38 Sloped channel - (1m)	146038	146438
K3-39 Sloped channel - (1m)	146039	146439
K3-40 Sloped channel - (1m)³	146040	146440
K3-040 Neutral channel - (1m)³	146049	146449
K3-0403 Neutral channel - (0.5m)³	146050	146450



The subassembly also optionally includes haunching detail.



3.1 User Defined Parameter

Input/Output Parameters

Name	Type	Direction	Default Value
Side	Side	Input	Right
Channel_Selection	Channel_type	Input	Neutral_Channel
Neutral_channel_height_selection	Neutral_channel_Height	Input	KS3_00_Neutral_channel_1m_146441
Slope_height_Range_Selection	Slope_channel_height_range	Input	Sloped_channel_255_To_300
Slop_Channel_105_to_150	Sloped_Channel_105_to_150	Input	KS3_1_Sloped_channel_1m_146401
Slop_Channel_155_to_200	Sloped_Channel_155_to_200	Input	KS3_11_Sloped_channel_1m_146411
Slop_Channel_205_to_250	Sloped_Channel_205_to_250	Input	KS3_21_Sloped_channel_1m_146421
Slop_Channel_255_to_300	Sloped_Channel_255_to_300	Input	KS3_31_Sloped_channel_1m_146431
Gratings_material_selection	Gratings	Input	Stainless_Steel_gratings
Stainless_steel_gratings_selection	Stainless_Steel_gratings	Input	Stainless_Wedgewire_Heelsafe_Type_847D_Grade_304_stainless_142223
Galvanised_steel_gratings_selection	Galvanised_Steel_gratings	Input	Galvanised_Transverse_Type_807Q_Galvanised_142413
iron_gratings_selection	Iron_Gratings	Input	Iron_Wave_Heelsafe_AntiSlip_Type_880D_Ductile_iron_142463
Haunching	Yes\No	Input	Yes
Haunching_class_selection	Haunch_Class_Selection	Input	Class_A_B
Haunch_Class_A_B_selection	Haunch_Class_A_B	Input	Grass_haunch_to_top_Class_A_B
Haunch_Class_C_D_selection	Haunch_Class_C_D	Input	Asphalt_sloped_haunch_class_C_D

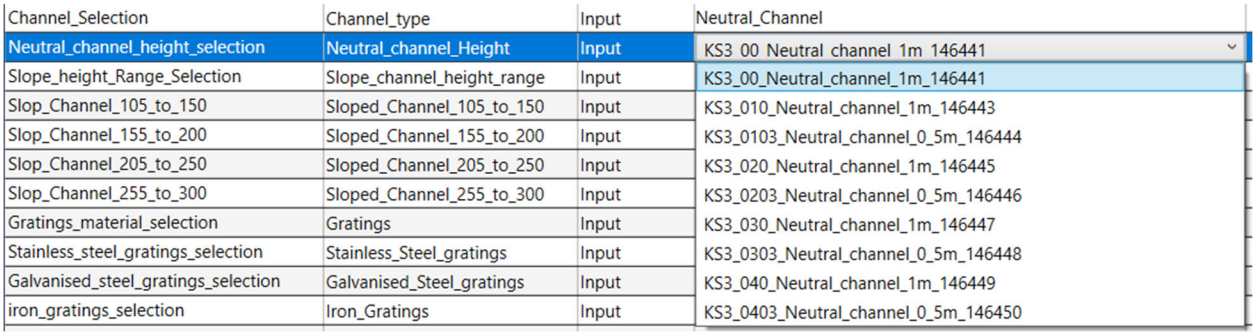
All the default values of the parameter can be edited by end-user. User can be able to select their required KlassikDrain, Grating and Haunch type.

3.2 KlassikDrain K300/KS300 with different Edge rail channel types

User can able to select their required KlassikDrain channel by using the parameter KlassikDrainType which has dropdown menu, with 49 different types of KlassikDrain channel, which includes Neutral and Slop channel.

initially user needs to select Neutral or Slop channel in Input/Output parameter table. There is channel_selection parameter with drop down menu.

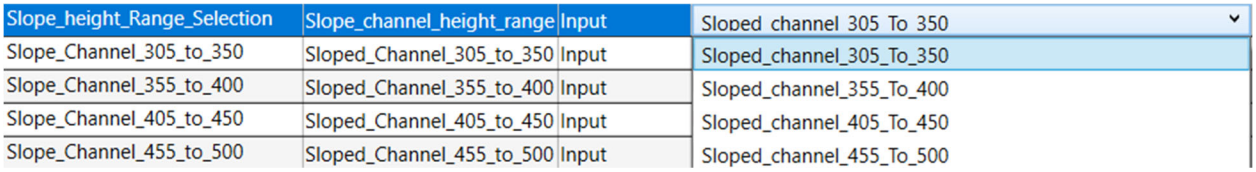
If users select Neutral channel for height selection there is parameter Neutral_channel_height_selection using this user can select their required height.



Channel_Selection	Channel_type	Input	Neutral_Channel
Neutral_channel_height_selection	Neutral_channel_Height	Input	KS3_00_Neutral_channel_1m_146441
Slope_height_Range_Selection	Slope_channel_height_range	Input	
Slop_Channel_105_to_150	Sloped_Channel_105_to_150	Input	
Slop_Channel_155_to_200	Sloped_Channel_155_to_200	Input	
Slop_Channel_205_to_250	Sloped_Channel_205_to_250	Input	
Slop_Channel_255_to_300	Sloped_Channel_255_to_300	Input	
Gratings_material_selection	Gratings	Input	
Stainless_steel_gratings_selection	Stainless_Steel_gratings	Input	
Galvanised_steel_gratings_selection	Galvanised_Steel_gratings	Input	
iron_gratings_selection	Iron_Gratings	Input	

KS3_00_Neutral_channel_1m_146441
KS3_010_Neutral_channel_1m_146443
KS3_0103_Neutral_channel_0_5m_146444
KS3_020_Neutral_channel_1m_146445
KS3_0203_Neutral_channel_0_5m_146446
KS3_030_Neutral_channel_1m_146447
KS3_0303_Neutral_channel_0_5m_146448
KS3_040_Neutral_channel_1m_146449
KS3_0403_Neutral_channel_0_5m_146450

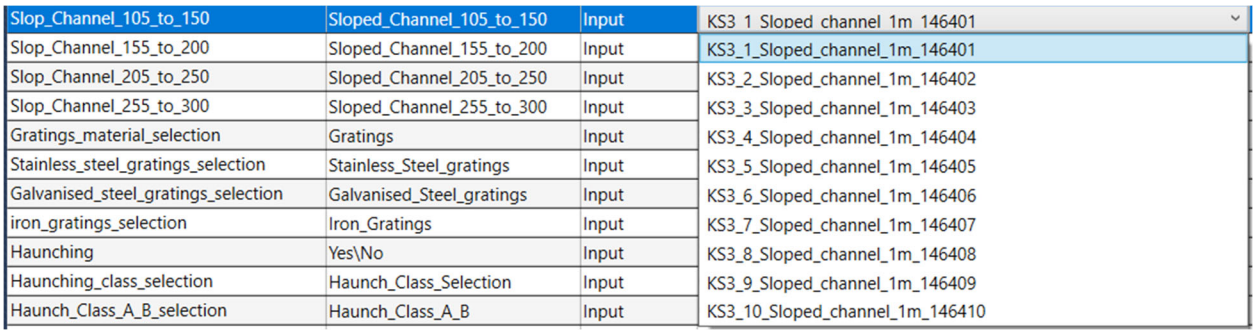
If users select Slop channel for height selection there is parameter Slope_height_Range_Selection using this user needs to select their height range which between 205 to 250, 255 to 300, 305 to 355 and 355 to 400. Which because Autodesk sub assembly composer have enumeration restriction with max 16 nos.



Slope_height_Range_Selection	Slope_channel_height_range	Input	Sloped_channel_305_To_350
Slope_Channel_305_to_350	Sloped_Channel_305_to_350	Input	
Slope_Channel_355_to_400	Sloped_Channel_355_to_400	Input	
Slope_Channel_405_to_450	Sloped_Channel_405_to_450	Input	
Slope_Channel_455_to_500	Sloped_Channel_455_to_500	Input	

Sloped_channel_305_To_350
Sloped_channel_355_To_400
Sloped_channel_405_To_450
Sloped_channel_455_To_500

After selecting the height range by using drop down menu user can select their required height.



Slop_Channel_105_to_150	Sloped_Channel_105_to_150	Input	KS3_1_Sloped_channel_1m_146401
Slop_Channel_155_to_200	Sloped_Channel_155_to_200	Input	
Slop_Channel_205_to_250	Sloped_Channel_205_to_250	Input	
Slop_Channel_255_to_300	Sloped_Channel_255_to_300	Input	
Gratings_material_selection	Gratings	Input	
Stainless_steel_gratings_selection	Stainless_Steel_gratings	Input	
Galvanised_steel_gratings_selection	Galvanised_Steel_gratings	Input	
iron_gratings_selection	Iron_Gratings	Input	
Haunching	Yes\No	Input	
Haunching_class_selection	Haunch_Class_Selection	Input	
Haunch_Class_A_B_selection	Haunch_Class_A_B	Input	

KS3_1_Sloped_channel_1m_146401
KS3_2_Sloped_channel_1m_146402
KS3_3_Sloped_channel_1m_146403
KS3_4_Sloped_channel_1m_146404
KS3_5_Sloped_channel_1m_146405
KS3_6_Sloped_channel_1m_146406
KS3_7_Sloped_channel_1m_146407
KS3_8_Sloped_channel_1m_146408
KS3_9_Sloped_channel_1m_146409
KS3_10_Sloped_channel_1m_146410

Slop_Channel_155_to_200	Sloped_Channel_155_to_200	Input	KS3_11_Sloped_channel_1m_146411
Slop_Channel_205_to_250	Sloped_Channel_205_to_250	Input	KS3_11_Sloped_channel_1m_146411
Slop_Channel_255_to_300	Sloped_Channel_255_to_300	Input	KS3_12_Sloped_channel_1m_146412
Gratings_material_selection	Gratings	Input	KS3_13_Sloped_channel_1m_146413
Stainless_steel_gratings_selection	Stainless_Steel_gratings	Input	KS3_14_Sloped_channel_1m_146414
Galvanised_steel_gratings_selection	Galvanised_Steel_gratings	Input	KS3_15_Sloped_channel_1m_146415
iron_gratings_selection	Iron_Gratings	Input	KS3_16_Sloped_channel_1m_146416
Haunching	Yes\No	Input	KS3_17_Sloped_channel_1m_146417
Haunching_class_selection	Haunch_Class_Selection	Input	KS3_18_Sloped_channel_1m_146418
Haunch_Class_A_B_selection	Haunch_Class_A_B	Input	KS3_19_Sloped_channel_1m_146419
Haunch_Class_C_D_selection	Haunch_Class_C_D	Input	KS3_20_Sloped_channel_1m_146420

Slop_Channel_205_to_250	Sloped_Channel_205_to_250	Input	KS3_21_Sloped_channel_1m_146421
Slop_Channel_255_to_300	Sloped_Channel_255_to_300	Input	KS3_21_Sloped_channel_1m_146421
Gratings_material_selection	Gratings	Input	KS3_22_Sloped_channel_1m_146422
Stainless_steel_gratings_selection	Stainless_Steel_gratings	Input	KS3_23_Sloped_channel_1m_146423
Galvanised_steel_gratings_selection	Galvanised_Steel_gratings	Input	KS3_24_Sloped_channel_1m_146424
iron_gratings_selection	Iron_Gratings	Input	KS3_25_Sloped_channel_1m_146425
Haunching	Yes\No	Input	KS3_26_Sloped_channel_1m_146426
Haunching_class_selection	Haunch_Class_Selection	Input	KS3_27_Sloped_channel_1m_146427
Haunch_Class_A_B_selection	Haunch_Class_A_B	Input	KS3_28_Sloped_channel_1m_146428
Haunch_Class_C_D_selection	Haunch_Class_C_D	Input	KS3_29_Sloped_channel_1m_146429
			KS3_30_Sloped_channel_1m_146430

Slop_Channel_255_to_300	Sloped_Channel_255_to_300	Input	KS3_31_Sloped_channel_1m_146431
Gratings_material_selection	Gratings	Input	KS3_31_Sloped_channel_1m_146431
Stainless_steel_gratings_selection	Stainless_Steel_gratings	Input	KS3_32_Sloped_channel_1m_146432
Galvanised_steel_gratings_selection	Galvanised_Steel_gratings	Input	KS3_33_Sloped_channel_1m_146433
iron_gratings_selection	Iron_Gratings	Input	KS3_34_Sloped_channel_1m_146434
Haunching	Yes\No	Input	KS3_35_Sloped_channel_1m_146435
Haunching_class_selection	Haunch_Class_Selection	Input	KS3_36_Sloped_channel_1m_146436
Haunch_Class_A_B_selection	Haunch_Class_A_B	Input	KS3_37_Sloped_channel_1m_146437
Haunch_Class_C_D_selection	Haunch_Class_C_D	Input	KS3_38_Sloped_channel_1m_146438
			KS3_39_Sloped_channel_1m_146439
Create parameter			KS3_40_Sloped_channel_1m_146440

3.3 KlassikDrain K300/KS300 grating types

User needs to select grating material or brickslot using the parameter Gratings_material_selection_and_Brickslot_selection

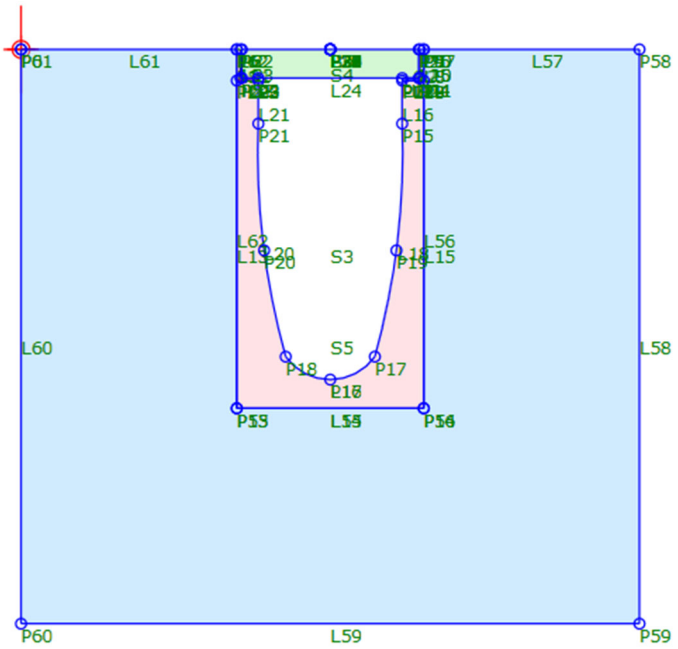
Gratings_material_selection	Gratings	Input	Stainless_Steel_gratings
Stainless_steel_gratings_selection	Stainless_Steel_gratings	Input	Galvanised_steel_gratings
Galvanised_steel_gratings_selection	Galvanised_Steel_gratings	Input	Stainless_Steel_gratings
iron_gratings_selection	Iron_Gratings	Input	Iron_gratings

After material selection from that drop down menu each material have multiple gratings using the parameter of material selected user can select their required gratings.

Stainless_steel_gratings_selection	Stainless_Steel_gratings	Input	Stainless Wedgewire Heelsafe Type 847D Grade 304 stainless 14
Galvanised_steel_gratings_selection	Galvanised_Steel_gratings	Inpu	Stainless_Wedgewire_Heelsafe_Type_847D_Grade_304_stainless_142223
iron_gratings_selection	Iron_Gratings	Inpu	Stainless_Wedgewire_Heelsafe_Type_848D_Grade_304_stainless_142224
Haunching	Yes\No	Inpu	Stainless_5_Star_Heelsafe_AntiSlip_Type_843D_Grade_304_stainless_142225
Haunching_class_selection	Haunch_Class_Selection	Inpu	Stainless_5_Star_Heelsafe_AntiSlip_Type_844D_Grade_304_stainless_142226
Haunch_Class_A_B_selection	Haunch_Class_A_B	Inpu	Stainless_Twinwire_Heelsafe_AntiSlip_Type_841D_Grade_304_stainless_142560
Haunch_Class_C_D_selection	Haunch_Class_C_D	Inpu	Stainless_Twinwire_Heelsafe_AntiSlip_Type_842D_Grade_304_stainless_142561
			Stainless_Splitwire_Heelsafe_AntiSlip_Type_839D_Grade_304_stainless_142573
Create parameter			Stainless_Splitwire_Heelsafe_AntiSlip_Type_840D_Grade_304_stainless_142574
			Stainless_Longitudinal_Heelsafe_AntiSlip_Type_816D_Grade_304_stainless_143138
			Steel_Mesh_Type_830Q_Grade_304_stainless_142409

Galvanised_steel_gratings_selection	Galvanised_Steel_gratings	Input	Galvanised Transverse Type 807Q Galvanised 142413
iron_gratings_selection	Iron_Gratings	Input	Galvanised_Transverse_Type_807Q_Galvanised_142413
Haunching	Yes\No	Input	Galvanised_Transverse_Type_808Q_Galvanised_142414
Haunching_class_selection	Haunch_Class_Selection	Input	Steel_Mesh_Type_805Q_Galvanised_142409

iron_gratings_selection	Iron_Gratings	Input	Iron Wave Heelsafe AntiSlip Type 880D Ductile iron 142463
Haunching	Yes\No	Inpu	Iron_Wave_Heelsafe_AntiSlip_Type_880D_Ductile_iron_142463
Haunching_class_selection	Haunch_Class_Selection	Inpu	Iron_Slotted_Type_860D_Ductile_iron_13870
Haunch_Class_A_B_selection	Haunch_Class_A_B	Inpu	Iron_Intercept_Heelsafe_AntiSlip_Type_876D_Ductile_iron_142175
Haunch_Class_C_D_selection	Haunch_Class_C_D	Inpu	Iron_Galvanised_Intercept_Heelsafe_AntiSlip_Type_875D_Galvanised_iron_142176



3.4 Haunch types

To include Haunching we have provided decision option so user can select Yes/or No from the parameter Haunching. There are two defferent classes for haunching A-B and C-D

Haunching	Yes\No	Input	Yes

There are two different classes for haunching A-B and C-D it can be decide by user, using Haunch class parameter drop down menu.

Haunch_Class	Haunch_Class_	Input	Class_C_D
Haunch_Class_A_B_selection	Haunch_Class_	Input	Class_A_B
Haunch_Class_C_D_selection	Haunch_Class_	Input	Class_C_D

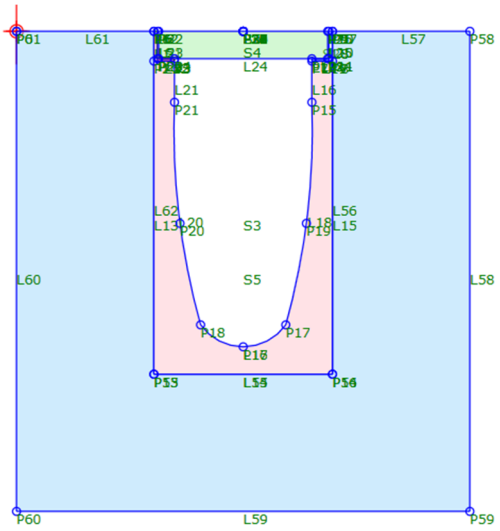
Haunch class A-B which has four type of haunch and C-D which have five types of haunch user can easily select their haunch type with provided parameters.

Haunch_Class_A_B_selection	Haunch_Class_	Input	Pavers_to_edge_class_A_B

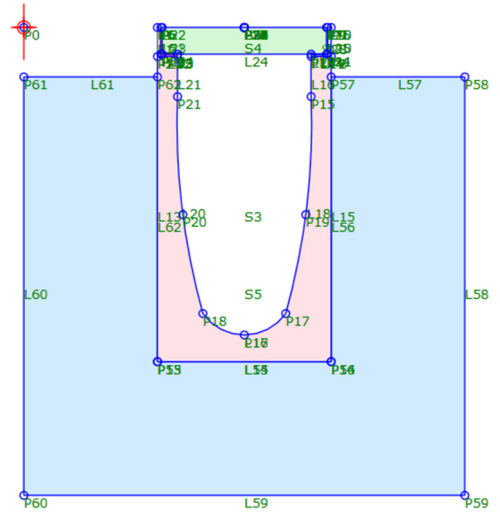
- Grass_haunch_to_top_Class_A_B
- Pavers_to_edge_class_A_B
- Asphalt_sloped_haunch_class_A_B
- Concrete_haunch_to_top_class_A_B

Haunch_Class_C_D_selection	Haunch_Class_	Input	Asphalt_haunch_to_top_class_C_D

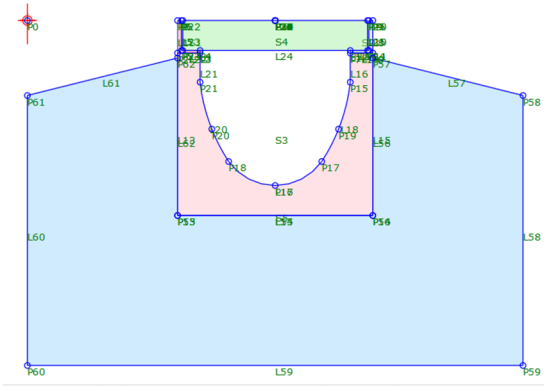
- Pavers_to_edge_class_C_D
- Pavers_haunch_to_top_class_C_D
- Asphalt_sloped_haunch_class_C_D
- Asphalt_haunch_to_top_class_C_D
- Concrete_haunch_to_top_class_C_D



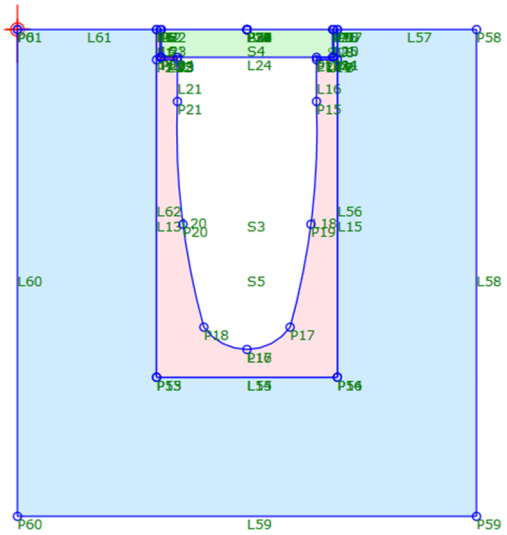
Grass haunch to top



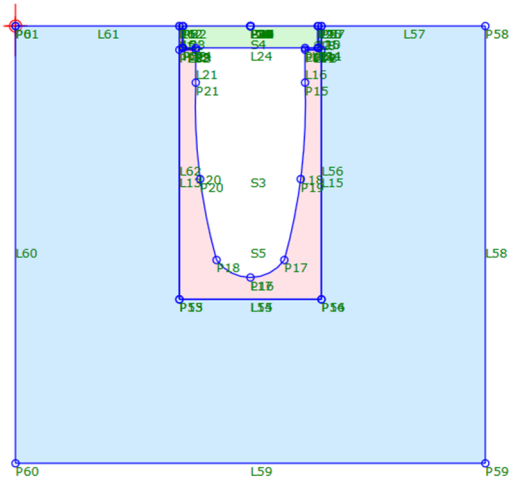
Pavers to edge



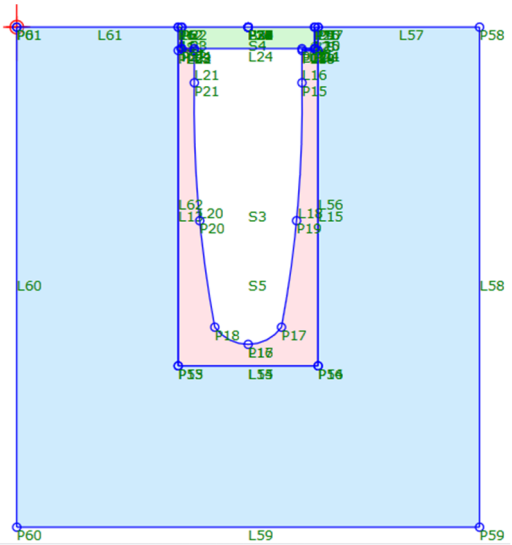
Asphalt sloped haunch



Concrete haunch to top



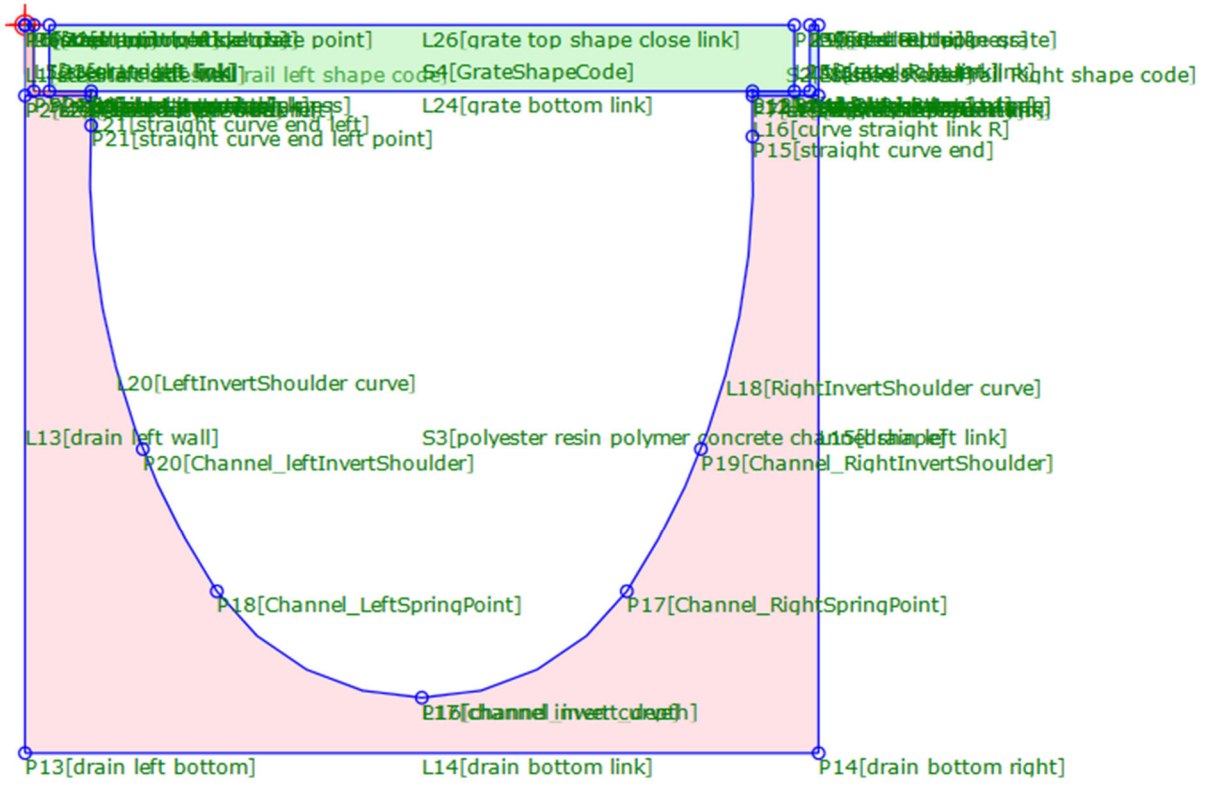
Pavers haunch to top



Asphalt haunch to top

3.5 Point Codes

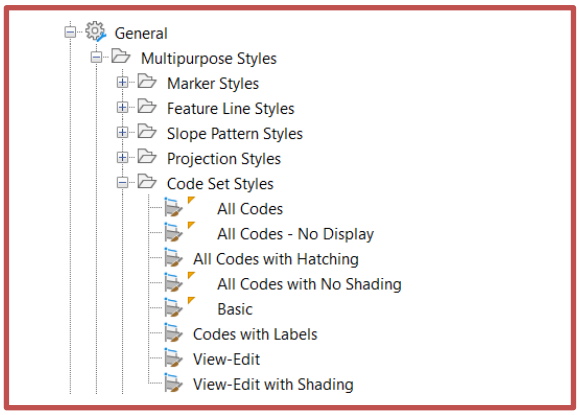
The point codes can be used in the code set styles to generate featurelines at the specific positions on the subassembly. The link codes can be used to display the outline of the subassembly in cross-sections, and also to create surface from the codes. The default values supplied with the subassembly include the standard codes of Top and Formation which are used universally to indicate a Top surface of the corridor model or a Formation surface of the corridor model respectively. The KlassikDrain is indicated by the default link code of KlassikDrain, and the default shape code of KlassikDrain. The grating is indicated by the default link code of edge rail, and the default shape code of edge rail .The haunching is indicated by the default link code of Haunch, and the default shape code of Haunch. All of these codes can be over-ridden by the user. The shape codes are used to enable hatching to be applied in the cross-section views, and also to enable volumes of materials to be generated.



4. Code Set Styles

Code Set Styles are used to control the appearance and labeling of the individual point, link, and shape components of the subassemblies. The many styles required are grouped into Code Sets. Code Set settings are located in the General collection on the Settings tab of the Tool space.

Different code set styles used in the KlassikDrain Code set style template as shown here.



4.1 Import Code Set Styles from one drawing to another

Open the drawing in which KlassikDrain Code Set style has to be imported.

- Run command IMPORTSTYLESANDSETTINGS
- Browse to the location of KlassikDrain Code Set Style template
- Select Styles as desired, check "Import Settings" toggle and click OK
- Warning will be displaying informing that duplicates styles may be overwritten
- Drawing will import styles and settings from KlassikDrain Code Set Style template to this template