Rainfall intensity has referred to Met Eireann rainfall intensity data from a nearby grid location as shown below.

The rainfall intensity provided by Met Eireann is presented below.

Met Eireann
Return Period Rainfall Depths for sliding Durations
Irish Grid: Easting: 95900, Northing: 225100,

	Interval		Years										
DURATION	6months,	1year,	2,	3,	4,	5,	10,	20,	30,	50,	75,	100,	120,
5 mins	3.4,	4.3,	4.8,	5.5,	5.9,	6.3,	7.3,	8.5,	9.2,	10.2,	11.0,	11.6,	12.1,
10 mins	4.7,	6.0,	6.7,	7.7,	8.3,	8.7,	10.2,	11.8,	12.8,	14.2,	15.3,	16.2,	16.8,
15 mins	5.5,	7.1,	7.9,	9.0,	9.7,	10.3,	12.0,	13.9,	15.1,	16.7,	18.0,	19.1,	19.8,
30 mins	7.2,	9.2,	10.2,	11.7,	12.6,	13.3,	15.5,	17.9,	19.4,	21.5,	23.2,	24.5,	25.4,
1 hours	9.4,	12.0,	13.2,	15.1,	16.3,	17.2,	20.1,	23.1,	25.0,	27.6,	29.9,	31.6,	32.7,
2 hours	12.2,	15.5,	17.2,	19.6,	21.1,	22.3,	25.9,	29.8,	32.3,	35.6,	38.4,	40.6,	42.0,
3 hours	14.2,	18.1,	20.0,	22.8,	24.5,	25.9,	30.1,	34.6,	37.4,	41.3,	44.5,	47.0,	48.7,
4 hours	15.9,	20.1,	22.3,	25.3,	27.3,	28.8,	33.5,	38.4,	41.6,	45.8,	49.5,	52.2,	54.0,
6 hours	18.5,	23.5,	25.9,	29.5,	31.8,	33.5,	38.9,	44.6,	48.2,	53.1,	57.3,	60.5,	62.6,
9 hours	21.6,	27.3,	30.2,	34.3,	36.9,	38.9,	45.2,	51.8,	56.0,	61.6,	66.4,	70.1,	72.5,
12 hours	24.1,	30.5,	33.6,	38.2,	41.1,	43.3,	50.2,	57.6,	62.2,	68.4,	73.8,	77.8,	80.4,
18 hours	28.1,	35.5,	39.2,	44.4,	47.8,	50.4,	58.3,	66.8,	72.1,	79.3,	85.5,	90.1,	93.2,
24 hours	31.3,	39.5,	43.6,	49.4,	53.2,	56.0,	64.9,	74.2,	80.1,	88.1,	94.9,	100.0,	103.4,
2 days	41.9,	51.6,	56.4,	63.1,	67.4,	70.6,	80.5,	90.8,	97.2,	105.8,	113.1,	118.6,	122.2,
3 days	51.0,	61.9,	67.2,	74.6,	79.3,	82.8,	93.6,	104.8,	111.7,	120.9,	128.6,	134.4,	138.2,
4 days	59.2,	71.2,	77.0,	85.0,	90.0,	93.8,	105.4,	117.3,	124.6,	134.3,	142.4,	148.5,	152.4,
6 days	74.3,	88.1,	94.7,	103.7,	109.4,	113.7,	126.5,	139.7,	147.7,	158.3,	167.1,	173.7,	177.9,
8 days	88.3,	103.6,	110.9,	120.9,	127.1,	131.7,	145.7,	159.9,	168.5,	179.9,	189.3,	196.3,	200.8,
10 days	101.6,	118.3,	126.2,	137.0,	143.7,	148.6,	163.6,	178.7,	187.9,	199.9,	209.9,	217.2,	222.0,
12 days	114.4,	132.4,	140.8,	152.3,	159.5,	164.8,	180.6,	196.6,	206.2,	218.8,	229.3,	237.0,	242.0,
16 days	139.0,	159.3,	168.7,	181.5,	189.4,	195.3,	212.7,	230.2,	240.7,	254.4,	265.7,	274.0,	279.3,
20 days	162.8,	185.1,	195.4,	209.3,	217.9,	224.2,	243.1,	261.8,	273.1,	287.7,	299.7,	308.5,	314.2,
25 days	191.7,	216.2,	227.5,	242.7,	252.1,	258.9,	279.3,	299.5,	311.6,	327.2,	340.1,	349.5,	355.5,

NOTES:
These values are derived from a Depth Duration Frequency (DDF) Model update 2023
For details refer to:
'Mateus C., and Coonan, B. 2023. Estimation of point rainfall frequencies in Ireland. Technical Note No. 68. Met Eireann',
Available for download at:
http://hdl.handle.net/2262/102417

Rainfall intensity data was assessed for the design of the surface water drainage network taking into consideration the following extreme case design assumptions:

- a 1 in 50-year rainfall storm event
- storm duration of 30 minutes
- rainfall depths for durations and return periods to be taken from Met Eireann Depth Duration Frequency (DDF) model 2023 (extract above).
- to slow the influx of water to interceptors and pipework, temporary surface ponding of up to 20mm depth is acceptable at gullies after the extreme storm duration considered of 30 mins
- The rainfall depth is indicated as 21.5mm for the 1:50 yr and 30 minute duration storm.

All storm drainage will be required to pass through a suitably sized interceptor before discharging into the sea. The interceptor has been sized as per Kingspan NSBE050 interceptor for a drainage area of 28 hectares as per manufacturers data as per extract below.

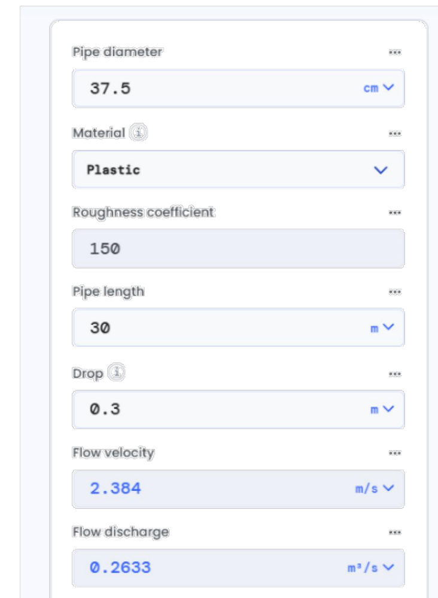
Model Reference	Flow (l/s)	Peak Flow Rate (l/s)	Drainage area (m2) Based on UK rainwater flow	Storage Capacity (Ltrs)	Storage Capacity (Ltrs)	Length (mm)	Diameter (mm)	Access Shaft Diameter* (mm)	Base Inlet Invert (mm)	Base to Outlet Invert (mm)	Standard Fall Across (mm)	Min Inlet Invert (mm)	Standard Pipework Diameter (mm)**
-	-	-	-	Silt	Oil	-	-	-	-	-	-	-	-
Polyethylene Chamber Construction													
NSBP003	3	30	1670	300	45	1700	1350	600	1760	1660	100	500	315
NSBP004	4.5	45	2500	450	60	1700	1350	600	1760	1660	100	500	315
NSBP006	6	60	3335	600	90	1700	1350	600	1760	1660	100	500	315
GRP Chamber Construction													
NSBE010	10	100	5560	1000	150	2072	1220	750	1450	1350	100	700	315
NSBE015	15	150	8335	1500	225	2950	1220	750	1450	1350	100	700	315
NSBE020	20	200	11111	2000	300	3896	1220	750	1450	1350	100	700	375
NSBE025	25	250	13890	2500	375	3576	1420	750	1680	1580	100	700	375
NSBE030	30	300	16670	3000	450	4266	1420	750	1680	1580	100	700	450
NSBE040	40	400	22222	4000	600	3230	1920	600	2185	2035	150	1000	500
NSBE050	50	500	27778	5000	750	3960	1920	600	2185	2035	150	1000	600
NSBE075	75	750	41667	7500	1125	5841	1920	600	2235	2035	200	950	675
NSBE100	100	1000	55556	10000	1500	7661	1920	600	2235	2035	200	950	750

Based on the 2.8 hectare quay area, the max stormwater flow rate based upon 21.5mm rainfall depth in 30 minutes is equivalent to 335 litres per sec.

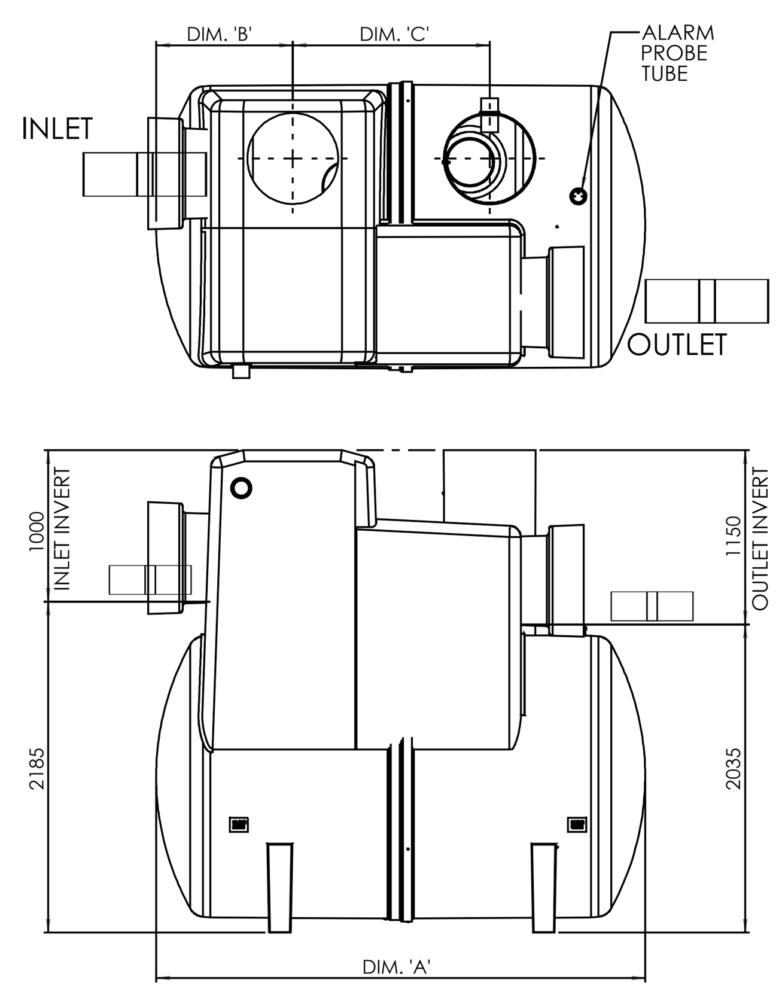
The calculation on the right (from web and based on the Hazen Williams pipe flow method) (www.omnicalculator.com) shows that a 375mm dia. pipe at 1:100 gradient can carry 0.263 m³ per sec = 263 litres per second.

This indicates that the pipe system acts as a hydro-brake at extreme design events and implies that ponding may occur for a short duration - expected to be 8-10 minutes after the design storm duration has passed.

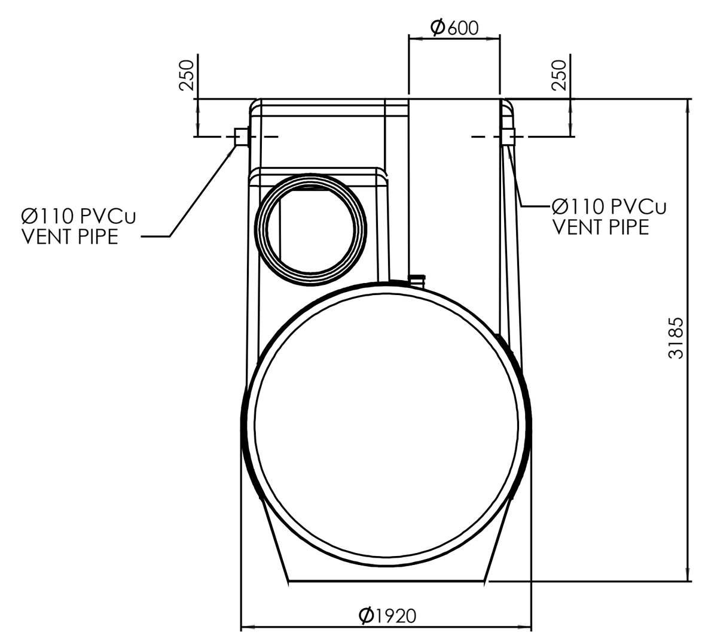
This is considered acceptable in the port environment where there are no fast-moving vehicles and limited ponding is acceptable at gullies for extreme storm events.



The largest pipe size should be 375mm dia with a Bypass Interceptor as per Kingspan NSBE050 and outfall directly to sea thereafter. This arrangement is shown on the 24984-XX-XXX-DR-MWP-CE-5104 with an outfall at the southern end of the quay.



NOTES
1. UNITS ARE SUPPLIED WITH THE STANDARD (MINIMUM) PIPEWORK SIZE, AND ORIENTATION SHOWN ON THE DRAWING. THE STANDARD EN858-1 STATES MINIMUM CONNECTION SIZES, UNITS ORDERED WITH DIFFERENT SIZE CONNECTIONS MAY NOT BE FULLY COMPLIANT WITH THE STANDARD. PLEASE CONSULT OUR SALES DEPARTMENT FOR DETAILS OF AVAILABLE OPTIONS, BUT PLEASE NOTE WE DO NOT ALTER INTERNAL PIPEWORK.
2. ALL UNITS SUPPLIED ARE CLASS 1 AND INCLUDE A COALESCER.
3. EXTENSION PARTS FOR DEEPER INVERTS CAN BE PROVIDED FOR ON SITE ASSEMBLY.
4. ALL UNITS REQUIRE APPROPRIATE CONCRETE BASE, COVER AND FRAME TO SUIT APPLIED LOADINGS.
5. THIS DRAWING SHOULD BE USED FOR DIMENSIONAL INFORMATION ONLY.
6. A Ø76mm TUBE IS SUPPLIED TO HOUSE AN OIL ALARM PROBE.



UNIT	NOMINAL FLOW (l/sec.)	DIM.'A'	DIM.'B'	DIM.'C'	STD. PIPE Ø	APPROX. EMPTY WEIGHT (kg)	FALL ACROSS UNIT
NSBE050	50.0	3960	1243	1325	600	782	150

KLARGESTER BYPASS SEPARATOR – NSBE050

NOTES:
1. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT SPECIFICATIONS, BILLS OF QUANTITIES, ARCHITECTURAL, SERVICES AND ENGINEERING DRAWINGS.
2. ALL LEVELS ARE IN METRES RELATED TO ORDNANCE DATUM MALIN HEAD.
3. ANY DISCREPANCIES BETWEEN THESE DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
4. DRAWINGS ARE NOT TO BE SCALED.
5. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS NOTED OTHERWISE.

REV	DATE	DESCRIPTION	BY	APP
0	21.11.25	ISSUED FOR PLANNING	JK	CF

PROJECT:
ROS AN MHÍL DEEP WATER QUAY

TITLE:
STORM DRAINAGE DESIGN INFORMATION

CLIENT:
DEPARTMENT OF AGRICULTURE, FOOD & THE MARINE

MWP
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
CORK | TRALEE | LONDON | LIMERICK
mwp.ie

DRAWN:	CHECKED:	APPROVED:
JK	CF	CF
PROJECT NUMBER: 24984	DATE: NOVEMBER 2025	SCALE @ A1: AS SHOWN

ACCEPTANCE CODE:	PURPOSE OF ISSUE:	PURPOSE CODE:
S	ISSUED FOR PLANNING PERMISSION	P3

DRAWING NUMBER:	REV:
24984-XX-XXX-DR-MWP-CE-5416	0