Prüfinstitut für Abwassertechnik GmbH

Prüfeinrichtung des Prüf- und Entwicklungsinstituts für Abwassertechnik an der RWTH Aachen

Prüfinstitut für Abwassertechnik GmbH

Report on practical testing according to EN 858-1 of a separator for light liquids

"POZO SH RASAN"

Rased Saneamiento S.A.

Report – No PIA2020-AB-1912-1073

Germany, Aachen, September 2020

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geprüft - tested - testé
NB 1739
PIA

TABLE OF CONTENTS

1 INTRODUCTION 3

2 SUMMARY 4

3 TEST REQUIREMENTS 4

4 DESCRIPTION OF TEST OBJECTS 5

5 TESTING THE WATERTIGHTNESS 6

6 DETERMINATION OF THE NOMINAL SIZE AND CLASS 6

7 TEST RESULTS 9

8 ANNEX 11

8.1 TECHNICAL DRAWING (MANUFACTURER'S INFORMATION) 11

8.2 ANALYSIS RESULTS 12

1 Introduction

The company

Rased Saneamientos S.A.
Av. de Alcoy 12
03410 Biar (Alicante)
Spain

assigned

Prüfinstitut für Abwassertechnik (PIA GmbH)
Hergenrather Weg 30
52074 Aachen
Germany

to test the efficiency and tightness of one oil separator. The test was performed according to EN 858-1 "Separator systems for light liquids (e. g. oil and petrol) - Part 1: Principles of product design, performance and testing, marking and quality control". The tests of watertightness and efficiency testing were performed on July 21st and July 22nd 2020.

PIA GmbH has a certified quality management system according to EN ISO 9001:2008 for the field "testing of wastewater equipment" and is approved by the European Commission as a testing authority "Notified Body" (NB 1739) according to the Construction Products Regulation (CPR) for small wastewater treatment systems for up to 50 PT according to EN 12566 Part 1, 3, 4, 6 and 7. Furthermore, PIA GmbH is accredited as testing laboratory based on EN ISO/IEC 17025:2005.

2 Summary

The "Pozo D1000" NS 6, made of polyethylene from Rased passed the practical testing of the efficiency and tightness according to EN 858-1. The tank was watertight and no individual sample had a higher value than 10 mg/l and in average all results are less than 5 mg/l as required for class 1.

The efficiency was tested according to EN 858-1 chapter 8.3.

3 Test requirements

EN 858-1:2002 + A1:2004. "Separator systems for light liquids (e. g. oil and petrol) - Part 1: Principles of product design, performance and testing, marking and quality control".

4 Description of Test Objects

- One oil separator of Rased
  Name of the separator: "POZO SH RASAN"

- Material: Polyethylene
- Usable Volume: 1,250 l

Figure 1: Separator before testing

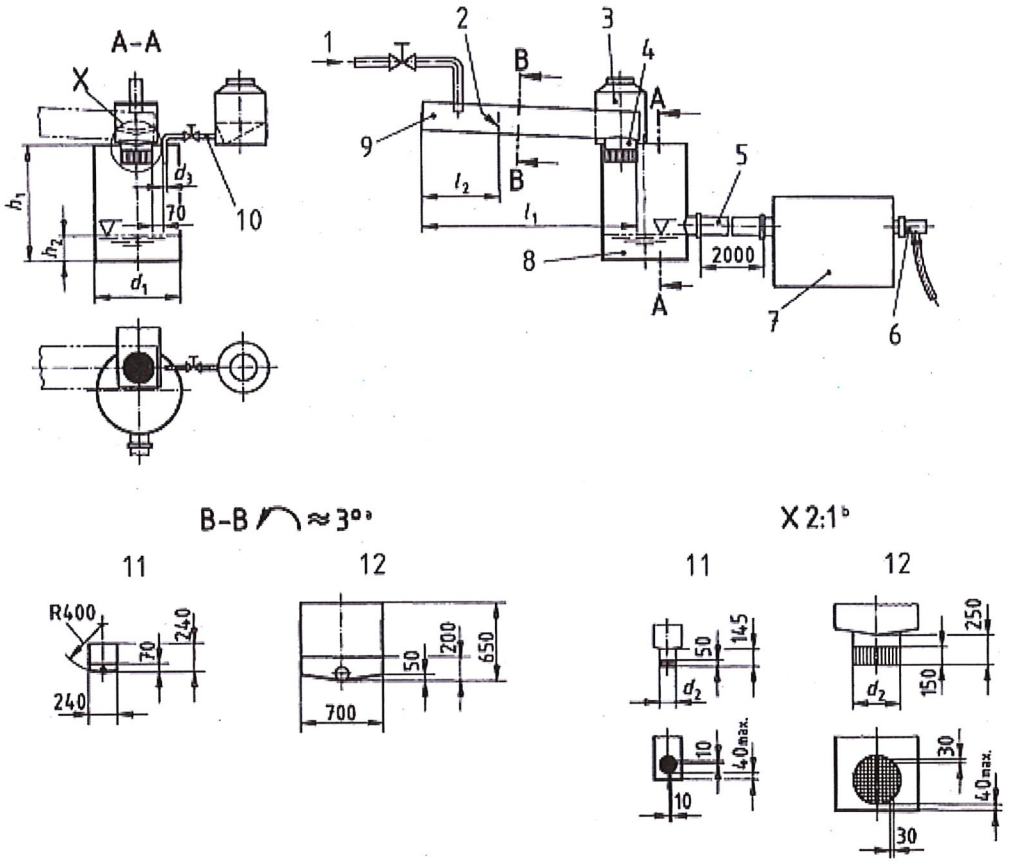
5 Testing the watertightness

The test of the watertightness was performed on July 21st 2020. The tank was filled with water up to 40 mm above the maximum operational liquid level for 20 minutes. No leaks were observed thus the tank passed the test for watertightness.

6 Determination of the nominal size and class

The determinations of the nominal size and class according to EN 858-1 chapter 8.3.3 were performed on July 22nd 2020. The separator was tested according to Figure 4 of EN 858-1.

Figure 2: Separator test rig



Key

1	Water supply	7	Separator
2	Weir	8	Collecting chamber
3	Receptacle for light liquid	9	Supply channel
4	Outlet pipe	10	Light liquid supply pipe
5	Supply pipe	11	For NS ≤ 6
6	Sampling pipe	12	For 6 < NS ≤ 100

[a] Supply channel with weir (on a larger scale)

[b] Outlet pipe with flow regulation grid

Figure 3: Testing apparatus for separators ≤ NS 100 (Figure 4 EN 858-1)

Used test fluids were drinking water and fuel oil in accordance to ISO 8217 with the following parameters:

Table 1: Test fluids

Water		Fuel oil (ISO-F-DMA)	
pH	Temp.	Temp.	ρ
-	°C	°C	g/cm³
7.8	18.0	12.0	0.86

Thus the test fluids corresponded to the requirements of the standard EN 858-1.

Determination of total duration of the test T is the sum of the running-in period T_E and the sampling time T_P and shall be at least 20 minutes. The sampling period T_P shall be 5 minutes.

T_E is calculated as follows:

$$T_E = \frac{4 \cdot V_k}{Q_W \cdot 60}$$

T_E [min] : running-in period with a minimum period of 15 minutes

V_k [l] : water volume of the separator

Q_W [l/s] : maximum allowable flow rate of water through the separator

The oil should be discharged with a constant flow rate of 5 ml/l.

Table 2: Calculated parameters for testing

NS 6	
V_k [l] (determined by PIA GmbH)	1,250
Q_w [l/s]	6.0
V_{Oil} [l]	36.0
T_E [min]	15:00
T [min]	20:00

7 Test Results

In the sampling period T_P five samples with at least 500 ml were taken via the sampling pipe.

Figure 4: Sampling point

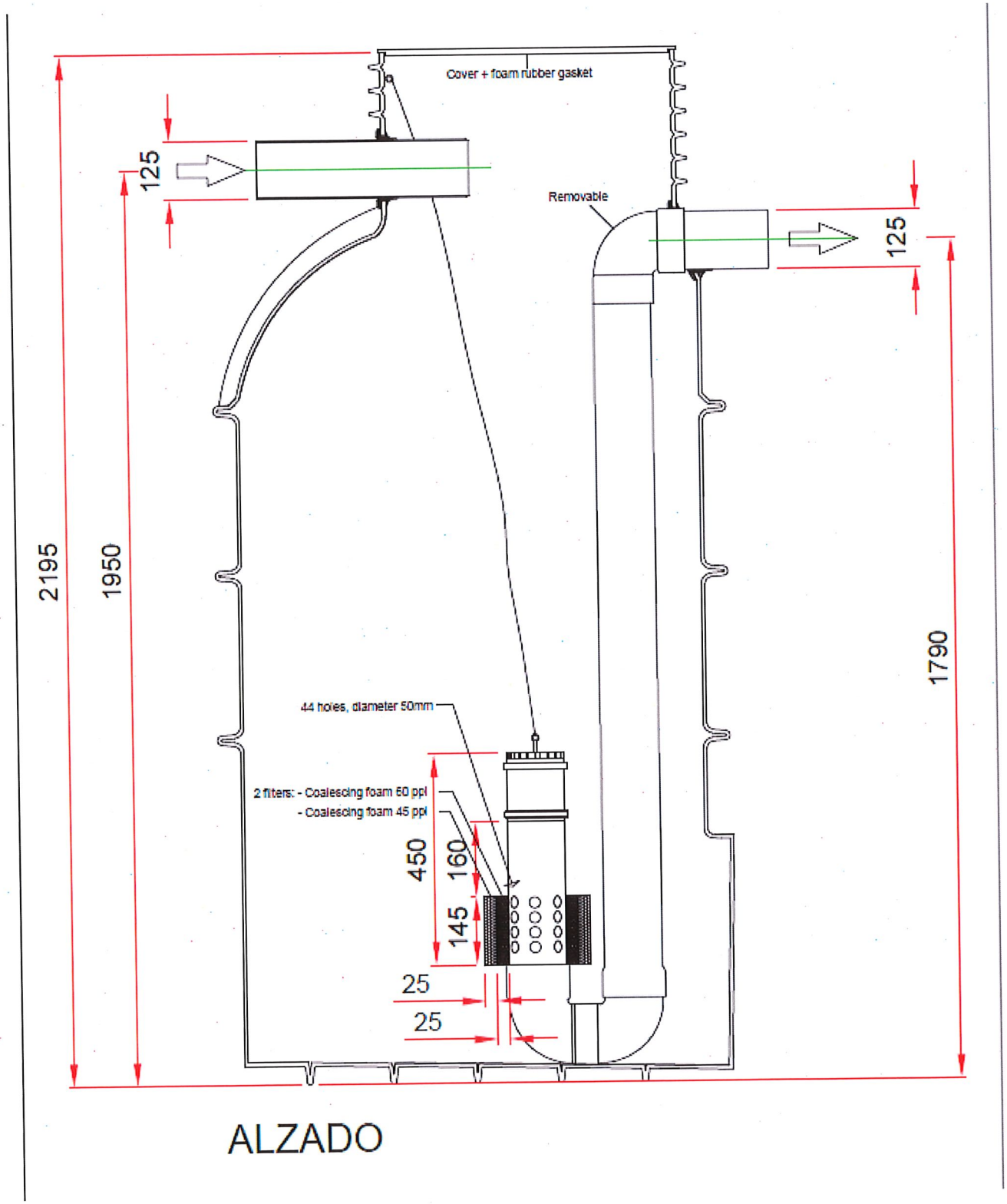
The samples were analysed for their hydrocarbon content using infrared spectroscopy by GEOTAIX UMWELTTECHNOLOGIE GmbH, Schumanstr. 29 in 52146 Würselen. GEOTAIX UMWELTTECHNOLOGIE GmbH is certified according to DIN EN ISO/IEC 17025 and part of the accreditation of PIA GmbH as „Notified Body".

Table 3: Summary of results

Sample	Result GC in mg/l
AB 1 (PMK 001)	3,0
AB 2 (PMK 002)	7,8
AB 3 (PMK 003)	4,6
AB 4 (PMK 004)	4,6
AB 5 (PMK 009)	4,1
Average (AB1 - AB 5)	**4,8**

8 Annex

8.1 Technical drawing (manufacturer’s information)



8.2 Analysis results

GEOTAIX UMWELTTECHNOLOGIE GMBH
SCHUMANSTR. 29
52146 WÜRSELEN
TEL.: 02405/4685-0
FAX: 02405/4685-10

GEOTAIX
UMWELTTECHNOLOGIE GMBH

Chemische Untersuchung von Wasserproben

Auftraggeber:	PIA Prüfinstitut für Abwassertechnik GmbH, Aachen
Unsere Auftragsnummer:	2009131
Projekt:	Rased 1912-1073 Test, Abscheider Behandlungsanlage: Kohlenwasserstoffrückhalt
Probeneingang:	22.07.2020
Probenahme:	Anlieferung

Untersuchungsergebnisse:

Labornummer		2009131-001	
Probenbezeichnung		PMK 001, 22.07.2020	
Kohlenwasserstoffe/GC	DIN EN ISO 9377-2	3,0	mg/L

Labornummer		2009131-002	
Probenbezeichnung		PMK 002, 22.07.2020	
Kohlenwasserstoffe/GC	DIN EN ISO 9377-2	7,8	mg/L

Labornummer		2009131-003	
Probenbezeichnung		PMK 003, 22.07.2020	
Kohlenwasserstoffe/GC	DIN EN ISO 9377-2	4,6	mg/L

Labornummer		2009131-004	
Probenbezeichnung		PMK 004, 22.07.2020	
Kohlenwasserstoffe/GC	DIN EN ISO 9377-2	4,6	mg/L

Labornummer		2009131-009	
Probenbezeichnung		PMK 009, 22.07.2020	
Kohlenwasserstoffe/GC	DIN EN ISO 9377-2	4,1	mg/L

Würselen, den 29.07.2020

Dr. B. Beissmann
Laborleiter

Anhang: Liste der von der GEOTAIX angewendeten Normen mit deren Ausgabeständen

DAkkS

Akkreditiertes Prüflaboratorium nach DIN EN ISO/IEC 17025