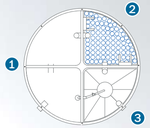
NDG WASTEWATER TREATMENT PROCESS

NDG tanks use German Purification Technology that treats water in 3 stages:

1- **Preliminary settlement**
Separation through sedimentation

2- **Biological purification with immersed and aerated fixed bed**
Microorganisms initiate the degradation of organic compounds

3- **Final clarification:**
Separation of biologically treated water from excess biomass



NDG FIXED BED TECHNOLOGY

IMPRESSIVE TESTS RESULTS (at –5°C)

Efficiency of Treatment			
COD (%)	BOD_5 (%)	NH_4-N (%)	SS (%)
90.2	97.6	98.8	95.0

University of Stuttgart Test Center

Vertical Load Test	No collapse occurred under a test load of 161 KN
Load Test Under High Water Table Level	After 3 weeks of load testing, the volume decreased by 1.51% (20% is allowed following DIN EN 12566-3 app. O6)

Vertical Load Test & Load Test Under High Water Table Level

MPA
Institute for Materials Research & Testing
Bauhaus-Univesity Weimar Germany

DIN # Z-55.6-75

German Din Certified Products

- More than **50 years** of industrial innovation
- NDG Water products are **German DIN Certified** and produced to align to **ISO Management System** standards, the highest European standards and the French agreement
- Structural and performance testing completed at the universities of Stuttgart, Weimar and Aachen in Germany
- NDG Water products (Oil Traps, Rain Water Collectors, Wastewater Treatment Plants...) are available through over **400 distributors** worldwide, including NDG eau, the European subsidiary of Nassar Techno Group, in France
- Counting its sanitation products and polyethylene items, Nassar Techno Group sells more than **200,000** products per year across **25 countries** on **3 continents**
- Regular presence at IFAT, Pollutec, Aquatech and Batimat exhibitions

CE

Deutsches Institut für Bautechnik DIBt

German DIN Certification

Europäisches Patentamt
European Patent Office
Office européen des brevets

European Patent No. 1167302

Management Quality Award

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE
Ministère de l'Écologie, du Développement durable et de l'Énergie

French Agreement

ISO 9001
BUREAU VERITAS Certification

ISO 9001 Certification

NDG water

NASSAR TECHNO GROUP
Mazraat Yachouh – Industrial Area
P.O Box 94 Bikfaya – Lebanon
T. +961 4 925000 **Fax** +961 4 925500
ndg@nassar-group.com **www.nassar-group.com**

NDG eau
Loon Plage – Zone Eurofret
4175 Route du Caillouti - 59279 Loon-Plage - France
T. +33 3 62 27 52 22 **Fax** +33 3 62 27 52 23
contact@ndgeau.com **www.ndgeau.com**

NDG water

NDG PLANTS SCORE 5 STARS ON CRASH TESTS!

NASSARTECHNOGROUP
ENVIRONMENTAL DIVISION

NDG Wastewater Treatment Plants
up to 1,000 IE (Inhabitant Equivalent)

OUTSTANDING PLANT QUALITY

- Three-layer Polyethylene-Polyurethane-Polyethylene tanks with wall thickness between 5 and 10 centimeters
- 100% water tight
- Insulation and stability of treatment in cold weather
- High load resistance and stability against soil and water pressure (up to 16 bars of pressure)
- Suitable for underground installation, in temporary or permanent water tables
- Ultra strong yet lightweight
- Non-corrosive and UV-resistant material
- Environment-friendly material
- 20-year warranty

A ONE-OF-A-KIND PRODUCT

- All treatment done in one tank up to 21 IE
- Preliminary macros waste concentrated in a single compartment
- Process stability, even with fluctuation in wastewater strength
- No additives (chemicals or microorganisms)

QUICK & EASY INSTALLATION

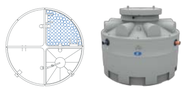
- Above-ground or underground installation
- Easy to transport
- Quick to install (1 to 2 hours per plant)
- Pit must be 60 centimeters wider than tank
- Back fill with sand or fine gravel

NO EXTRA COSTS

- Tanks require no extra technical work, unlike concrete tanks
- No traditional maintenance required, such as adding chemicals, washing or periodic replacement
- Sludge removal once a year
- Treated water can be reused for root irrigation

XXS

Treatment Capacity	1.2 m³/day
Maximum IE	8



Dimensions		Volume			Other Characteristics			
Ø	H	Primary Settlement	Fixed Bed Chamber	Secondary Settlement	Weight	Blower	Sludge Return	Power Supply
(m)	(m)	(m³)	(m³)	(m³)	(kg)		Air Lift Pump	230 V,1~,
2.26	2.02	1.6	0.75	0.5	510	100 W	25 W	125 W

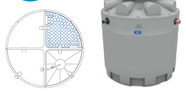
XS

Treatment Capacity	1.9 m³/day
Maximum IE	13

Dimensions		Volume			Other Characteristics			
Ø	H	Primary Settlement	Fixed Bed Chamber	Secondary Settlement	Weight	Blower	Sludge Return	Power Supply
(m)	(m)	(m³)	(m³)	(m³)	(kg)		Air Lift Pump	230 V,1~,
2.26	2.5	2.8	1.05	0.8	650	125 W	25 W	150 W

S

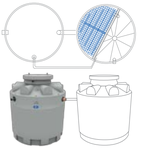
Treatment Capacity	3.15 m³/day
Maximum IE	21



Dimensions		Volume			Other Characteristics			
Ø	H	Primary Settlement	Fixed Bed Chamber	Secondary Settlement	Weight	Blower	Sludge Return	Power Supply
(m)	(m)	(m³)	(m³)	(m³)	(kg)		Air Lift Pump	230 V,1~,
2.26	3.05	3.16	1.48	1.08	810	250 W	25 W	275 W

M

Treatment Capacity	6.3 m³/day
Maximum IE	42

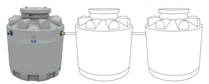


Dimensions		Volume			Other Characteristics				
Ø	H	Primary Settlement	Fixed Bed Chamber	Secondary Settlement	Weight	Blower	Sludge Return	Power Supply	
(m)	(m)	(m³)	(m³)	(m³)	1st Tank (kg)	2nd Tank (kg)		Air Lift Pump	230 V,1~,
2.26	3.05	7	2.96	2.18	560	915	550 W	25 W	575 W

M+

Treatment Capacity	8 m³/day
Maximum IE	53

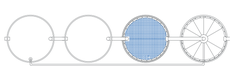
Dimensions		Volume			Other Characteristics					
Ø	H	Primary Settlement	Fixed Bed Chamber	Secondary Settlement	Weight			Feed Pump	Blower	Sludge Return	Power Supply
(m)	(m)	(m³)	(m³)	(m³)	1st Tank (kg)	2nd Tank (kg)	3rd Tank (kg)			Air Lift Pump	230 V,1~,
2.26	3.05	14	2.96	2.18	560	560	915	1 piece 0.93 KW	750 W	25 W	1.7 KW



L

Treatment Capacity	14 m³/day
Maximum IE	93

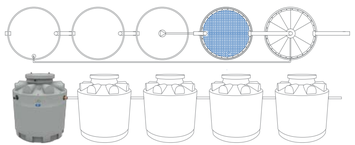
Dimensions		Volume			Other Characteristics				
Ø	H	Primary Settlement	Fixed Bed Chamber	Secondary Settlement	Weight			Blower	Sludge Return	Power Supply
(m)	(m)	(m³)	(m³)	(m³)	1st Tank (kg)	2nd Tank (kg)	3rd Tank (kg)		Submers. Pump	230 V,1~,
2.26	3.05	14	6.7	4.29	560	1 100	595	750 W	430 W	1.2 KW



XL

Treatment Capacity	20 m³/day
Maximum IE	135

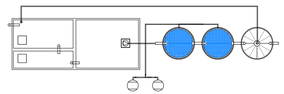
Dimensions		Volume			Other Characteristics						
Ø	H	Primary Settlement	Fixed Bed Chamber	Secondary Settlement	Weight			Feed Pump	Blower	Sludge Return	Power Supply
(m)	(m)	(m³)	(m³)	(m³)	1st Tank (kg)	2nd Tank (kg)	3rd Tank (kg)	1 piece		Submers. Pump	230 V,1~,
2.26	3.05	21	6.7	4.29	560	1 100	595	0.93 W	1 100 W	430 W	2.5 KW



XL2

Treatment Capacity	34 m³/day
Maximum IE	225

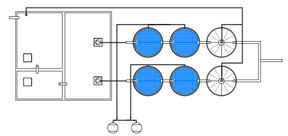
Pre-Treatment				Biologic Treatment						
Volume				Dimensions		Volume		Other Characteristics		
Primary Settlement I	Primary Settlement II	Equalization Tank	Feed Pump	Ø	H	Fixed Bed Tanks	Secondary settlement	Blower	Sludge Return Pump	Power Supply
(m³)	(m³)	(m³)	1 piece	(m)	(m)	(m³)	(m³)	2 pieces	1piece	400 V, three phases, 3 KW
20	10	30	230 V, 0.93 KW	2.26	3.05	13.4	4.29	1.5 KW	230 V, 0.43 KW	



XL4

Treatment Capacity	68 m³/day
Maximum IE	450

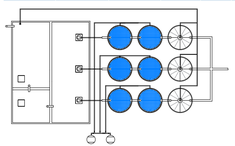
Pre-Treatment				Biologic Treatment						
Volume				Dimensions		Volume		Other Characteristics		
Primary Settlement I	Primary Settlement II	Equalization Tank	Feed Pump	Ø	H	Fixed Bed Tanks	Secondary settlement	Blower	Sludge Return Pump	Power Supply
(m³)	(m³)	(m³)	2 pieces	(m)	(m)	(m³)	(m³)	2 pieces	2 pieces	400 V, three phases, 6 KW
40	20	60	230 V, 0.93 KW	2.26	3.05	26.8	8.58	3 KW	230 V, 0.43 KW	



XL6

Treatment Capacity	101 m³/day
Maximum IE	675

Pre-Treatment				Biologic Treatment						
Volume				Dimensions		Volume		Other Characteristics		
Primary Settlement I	Primary Settlement II	Equalization Tank	Feed Pump	Ø	H	Fixed Bed Tanks	Secondary settlement	Blower	Sludge Return Pump	Power Supply
(m³)	(m³)	(m³)	3 pieces	(m)	(m)	(m³)	(m³)	2 pieces	3 pieces	400 V, three phases, 9.6 KW
60	30	90	230 V, 0.93 KW	2.26	3.05	45.6	12.78	5.5KW	230 V, 0.43 KW	



XL8

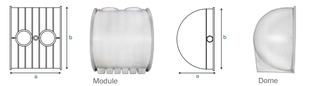
Treatment Capacity	135 m³/day
Maximum IE	900

Pre-Treatment				Biologic Treatment						
Volume				Dimensions		Volume		Other Characteristics		
Primary Settlement I	Primary Settlement II	Equalization Tank	Feed Pump	Ø	H	Fixed Bed Tanks	Secondary settlement	Blower	Sludge Return Pump	Power Supply
(m³)	(m³)	(m³)	4 pieces	(m)	(m)	(m³)	(m³)	2 pieces	4 pieces	400 V, three phases, 11 KW
80	40	120	230 V, 0.93 KW	2.26	3.05	53.6	17.16	5.5 KW	230 V, 0.43 KW	

- IE (Inhabitant Equivalent): 150L /day 60g BOD_5 /day
- For Wastewater Treatment Plants with a bigger capacity or for different applications please do not hesitate to contact us

UNDERGROUND MODULAR TANKS

NDG WATER IS REPLACING CONCRETE WITH ITS LATEST INNOVATION: THE MODULAR TANK



Type	Capacity (liters)	a (mm)	b (mm)
DOME	3 450	1 350	2 280
MODULE	6 150	1 850	2 280

Type	Capacity (liters)	Length (mm)	Diameter (mm)
MTT13	13 000	4 570	2 280
MTT19	19 000	6 430	2 280
MTT25	25 000	8 290	2 280
MTT31	31 000	10 150	2 280
MTT37	37 000	12 010	2 280

The **Modular Tank's** container has an **unlimited capacity** starting at 13,000 liters.
Its unique **multiple-stage** assembly guarantees its **quality and strength**.

The custom-built Modular Tank can be used as a substitute for the NDG Type XL polyethylene settlement tank, as well as concrete settlement tanks for treatment plants ranging from XL2 to XL8.