

NORWECO, INC.

220 Republic Street
Norwalk, OH 44857
USA

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CAN/BNQ 3680-600/2009-05-01 M2 (2017-07-18) *Onsite Residential Wastewater Treatment Technologies*

Certificate number: **2406**

Issue date: **2023-11-30**

Expiry date: **2024-04-30**

Stand-alone wastewater treatment systems

Model Hydro-Kinetic®

Capacity	Model Number	Model Designation	Capacity (Liters/day)
	1260L-3M, 1260L-4M 1260L-4T, 1260L-DT	1260L FEU	1260
	1600L-3M, 1600L-4M 1600L-4T, 1600L-DT	1600L FEU	1600
	1890L-4M, 1890L-4T 1890L-3M	1890L FEU	1890
	2270L-4M, 2270L-4T 2270L-3M, 2270L-4G	2270L FEU	2270
	3020L-3M, 3020L-4M	3020L FEU	3020
	3780L-3M, 3780L-4M 3780L-4T	3780L FEU	3780
	4730L-3M, 4730L-4M	4730L FEU	4730
	5670L-3M, 5670L-4M	5670L FEU	5670

Model Configuration :

3M: Pre-treatment tank, three chamber treatment tank, Bio-Film Reactor tank.
 3780L-3M, 4730L-3M, 5670L-3M: Pre-treatment tank, anoxic tank, three chamber treatment tank, Bio-Film Reactor tank.
 2270L-4G: Four chamber HDPE treatment tank, followed by HDPE Bio-Film Reactor tank.
 4M: Four chamber treatment tank, Bio-Film Reactor tank.
 3780L-4M, 4730L-4M, 5670L-4M: Pre-treatment tank, anoxic tank, four chamber mid seam treatment tank, Bio-Film Reactor tank.
 4T: Four chamber top seam tank, followed by Bio-Film Reactor tank.
 3780L-4T: Pre-treatment tank, anoxic tank, four chamber top seam treatment tank, Bio-Film Reactor tank.
 DT: Two chamber pre-treatment/anoxic tank, two chamber aeration/clarifier tank, Bio-Film Reactor tank.

Material: Constructed using concrete or plastic tanks that conforms with the strength and watertightness requirements of Standard CAN/CSA-B66 or Standard BNQ 3680-905, or equivalent acceptable to the Authority having jurisdiction.

Treatment Class: B-IV, D-I and N-I.

Certificate precisions: The tests specified in articles 8.1 and 8.2 were carried out with wastewater, at a minimum controlled temperature of 11 °C ± 1 °C.

Note that this treatment chain has no septic tank.
 Pre-treatment and anoxic tanks can be combined into a single tank or two tanks in series. A single Bio-Film Reactor tank with up to two reactor elements is utilized for models rated 3020 L/d or less.
 Models rated for 3780 L/d and greater may use two Bio-Film Reactor tanks with two reactor elements per tank, or one Bio-Film Reactor tank with four reactor elements

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Stand-alone wastewater treatment systems

Model Hydro-Kinetic® + phosphorus removal + UV disinfection

Capacity	Model Number	Model Designation	Capacity (Liters/day)
	1260L-P-UV-3M, 1260L-P-UV-4M 1260L-P-UV-4T, 1260L-P-UV-DT	1260L FEU	1260
	1600L-P-UV-3M, 1600L-P-UV-4M 1600L-P-UV-4T, 1600L-P-UV-DT	1600L FEU	1600
	1890L-P-UV-4M, 1890L-P-UV-4T 1890L-P-UV-3M	1890L FEU	1890
	2270L-P-UV-4M, 2270L-P-UV-4T 2270L-P-UV-3M, 2270L-P-UV-4G	2270L FEU	2270
	3020L-P-UV-3M, 3020L-P-UV-4M	3020L FEU	3020
	3780L-P-UV-3M, 3780L-P-UV-4M 3780L-P-UV-4T	3780L FEU	3780
	4730L-P-UV-3M, 4730L-P-UV-4M	4730L FEU	4730
	5670L-P-UV-3M, 5670L-P-UV-4M	5670L FEU	5670

Model Configuration :

P-UV-3M: Pre-treatment tank, three chamber treatment tank, Bio-Film Reactor tank, Phos-4-Fade, UV disinfection.

3780L-P-UV-3M, 4730L-P-UV-3M, 5670L-P-UV-3M: Pre-treatment tank, anoxic tank, three chamber treatment tank, Bio-Film Reactor tank, Phos-4-Fade tank, UV disinfection.

2270L-P-UV-4G: Four chamber HDPE treatment tank, HDPE Bio-Film Reactor tank, Phos-4-Fade tank, UV disinfection.

P-UV-4M: Four chamber treatment tank, Bio-Film Reactor tank, Phos-4-Fade tank, UV disinfection.

3780L-P-UV-4M, 4730L-P-UV-4M, 5670L-P-UV-4M: Pre-treatment tank, anoxic tank, four chamber treatment tank, Bio-Film Reactor tank, Phos-4-Fade tank, UV disinfection.

P-UV-4T: Four chamber top seam treatment tank, Bio-Film Reactor tank, Phos-4-Fade tank, UV disinfection.

3780L-P-UV-4T: Pre-treatment tank, anoxic tank, four chamber treatment tank, Bio-Film Reactor tank, Phos-4-Fade tank, UV disinfection.

P-UV-DT: Two chamber pre-treatment/anoxic tank, two chamber aeration/clarifier tank, Bio-Film Reactor tank, Phos-4-Fade tank, UV disinfection.

Material: Constructed using concrete or plastic tanks that conforms with the strength and watertightness requirements of Standard CAN/CSA-B66 or Standard BNQ 3680-905, or equivalent acceptable to the Authority having jurisdiction.

Treatment Class B-IV, P-II, D-III and N-I.



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Certificate precisions

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Note that this treatment chain has no septic tank
Pre-treatment and anoxic tanks can be combined into a single tank or two tanks in series. A single Bio-Film Reactor tank with up to two reactor elements is utilized for models rated 3020 L/d or less.
Models rated for 3780 L/d or greater may use two Bio-Film Reactor tanks with two reactor elements per tank, or one Bio-Film Reactor tank with four reactor elements.

Authorized UV Lamp:

Model AT 1500 from Norweco is authorized for systems with hydraulic capacity of 5670 L/d or less.
UV system can be installed inside Bio-Film Reactor tank when the configuration utilizes a single Bio-Film Reactor tank.
UV system can be installed inside Phos-4-Fade tank when the configuration utilizes a single Phos-4-Fade tank

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Model Hydro-Kinetic® + UV disinfection

Capacity

Model Number	Model Designation	Capacity (Liters/day)
1260L-UV-3M, 1260L-UV-4M 1260L-UV-4T, 1260L-UV-DT	1260L FEU	1260
1600L-UV-3M, 1600L-UV-4M 1600L-UV-4T, 1600L-UV-DT	1600L FEU	1600
1890L-UV-4M, 1890L-UV-4T 1890L-UV-3M	1890L FEU	1890
2270L-UV-4M, 2270L-UV-4T 2270L-UV-3M, 2270L-UV-4G	2270L FEU	2270
3020L-UV-3M, 3020L-UV-4M	3020L FEU	3020
3780L-UV-3M, 3780L-UV-4M 3780L-UV-4T	3780L FEU	3780
4730L-UV-3M, 4730L-UV-4M	4730L FEU	4730
5670L-UV-3M, 5670L-UV-4M	5670L FEU	5670

Model Configuration :

UV-3M: Pre-treatment tank, three chamber treatment tank, Bio-Film Reactor tank, UV disinfection.
 3780L-UV-3M: Pre-treatment tank, anoxic tank, three chamber treatment tank, Bio-Film Reactor tank, UV disinfection.
 2270L-UV-4G: Four chamber HDPE treatment tank, followed by HDPE Bio-Film Reactor tank, followed by UV disinfection.
 UV-4M: Four chamber treatment tank, Bio-Film Reactor tank, UV disinfection.
 3780L-UV-4M: Pre-treatment tank, anoxic tank, four chamber treatment tank, Bio-Film Reactor tank, UV disinfection.
 UV-4T: Four chamber top seam treatment tank, Bio-Film Reactor tank, UV disinfection.
 3780L-UV-4T: Pre-treatment tank, anoxic tank, four chamber top seam treatment tank, Bio-Film Reactor tank, UV disinfection.
 UV-DT: Two chamber pre-treatment/anoxic tank, two chamber aeration/clarifier tank, Bio-Film Reactor tank, UV disinfection.

Material: Constructed using concrete or plastic tanks that conforms with the strength and watertightness requirements of Standard CAN/CSA-B66 or Standard BNQ 3680-905, or equivalent acceptable to the Authority having jurisdiction.

Treatment Class B-IV, D-III and N-I.

Certificate precisions The tests specified in articles 8.1 and 8.2 were carried out with wastewater, at a minimum controlled temperature of 11 °C ± 1 °C.

Note that this treatment chain has no septic tank
 Pre-treatment and anoxic tanks can be combined into a single tank or two tanks in series
 A single Bio-Film Reactor tank with up to two reactor elements is utilized for models rated 3020 L/d or less.
 Models rated for 3780 L/d or greater may use two Bio-Film Reactor tanks with two reactor elements per tank, or one Bio-Film Reactor tank with four reactor elements.



**Bureau de normalisation
du Québec**

BNQ is a member of the National
Standards System (NSS).

ANNEX TO THE CERTIFICATE

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Authorized UV Lamp:

Model AT 1500 from Norweco is authorized for systems with hydraulic capacity of 5670 L/d or less.
UV system can be installed inside Bio-Film Reactor tank when the configuration utilizes a single Bio-Film Reactor tank.

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Stand-alone wastewater treatment systems

Model Hydro-Kinetic® + phosphorus removal

Capacity

Model Number	Model Designation	Capacity (liters/day)
1260L-P-3M, 1260L-P-4M 1260L-P-4T, 1260L-P-DT	1260L FEU	1260
1600L-P-3M 1600L-P-4M 1600L-P-4T, 1600L-P-DT	1600L FEU	1600
1890L-P-4M, 1890L-P-4T 1890L-P-3M	1890L FEU	1890
2270L-P-4M, 2270L-P-4T 2270L-P-3M, 2270L-P-4G	2270L FEU	2270
3020L-P-3M, 3020L-P-4M	3020L FEU	3020
3780L-P-3M, 3780L-P-4M 3780L-P-4T	3780L FEU	3780
4730L-P-3M, 4730L-P-4M	4730L FEU	4730
5670L-P-3M, 5670L-P-4M	5670L FEU	5670

Model Configuration :

P-3M: Pre-treatment tank, three chamber treatment tank, Bio-Film Reactor tank, Phos-4-Fade tank.
3780L-P-3M, 4730L-P-3M, 5670L-P-3M: Pre-treatment tank, anoxic tank, three chamber treatment tank, Bio-Film Reactor tank, Phos-4-Fade tank.
2270L-P-4G: Four chamber HDPE treatment tank, HDPE Bio-Film Reactor tank, Phos-4-Fade tank.
P-4M: Four chamber treatment tank, Bio-Film Reactor tank, Phos-4-Fade tank.
3780L-P-4M, 4730L-P-4M, 5670L-P-4M: Pre-treatment tank, anoxic tank, four chamber treatment tank, Bio-Film Reactor tank, Phos-4-Fade tank.
P-4T: Four chamber top seam treatment tank, Bio-Film Reactor tank, Phos-4-Fade tank.
3780L-P-4T : Pre-treatment tank, anoxic tank, four chamber top seam treatment tank, Bio-Film Reactor tank, Phos-4-Fade tank.
P-DT: Two chamber pre-treatment/anoxic tank, followed two chamber aeration/clarifier tank, Bio-Film Reactor tank, Phos-4-Fade tank.

Material:

Constructed using concrete or plastic tanks that conforms with the strength and watertightness requirements of Standard CAN/CSA-B66 or Standard BNQ 3680-905, or equivalent acceptable to the Authority having jurisdiction.

Treatment Class

B-IV, P-II, D-I and N-I.



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Certificate explanation

The tests specified in articles 8.1 and 8.2 were carried out with wastewater, at a minimum controlled temperature of $11\text{ °C} \pm 1\text{ °C}$.
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List of recognized manufacturers for system components

Hydro-Kinetic® concrete manufacturers and system assemblers:

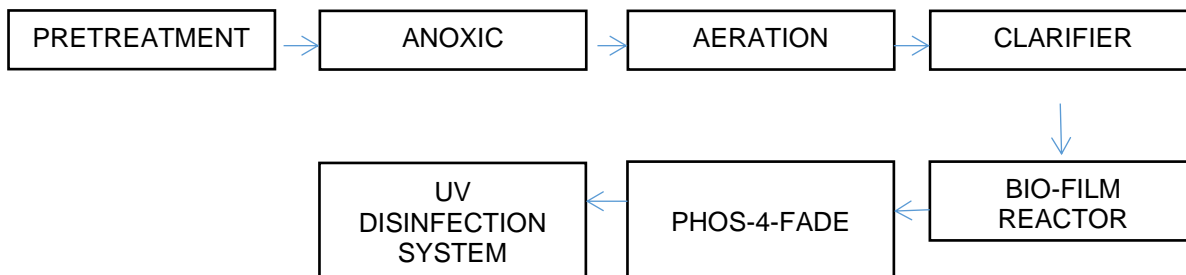
Aubert & Marois Ltée 842, rue Principale Lévis, Québec G6J 1A8	Rénova Béton Inc. 317, rue St-François Xavier Delson, Québec J5B 1X8	Ciment Lacasse Itée 48, montée Laramée Ste-Anne-des-Plaines, Québec J0N 1H0
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Béton architecturaux Breton
B.A.B. inc.
570, 2e Av, Saint-Romuald, QC
G6W 5M6

Hydro-Kinetic® HDPE manufacturers:

Norweco Inc..
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**FLOW DIAGRAM OF HYDRO-KINETIC®
WITH PHOSPHORUS REMOVAL AND UV DISINFECTION**



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HISTORY	
Date	Modification description
2016-04-22	<ul style="list-style-type: none"> – Hydro-Kinetic® certification (classes B-IV, D-I and N-I). – Hydro-Kinetic® with phosphorus removal and disinfection units certification (classes B-IV, P-II, D-III and N-I). – Hydro-Kinetic® with disinfection unit certification (classes B-IV, D-III and N-I).
2016-06-01	<ul style="list-style-type: none"> – Addition of models 1260L FEU and 1890L FEU for all Hydro-Kinetic® treatment classes. – Addition of Hydro-Kinetic® with phosphorus removal (classes B-IV, P-II, D-I and N-I). – Updated model numbers for all Hydro-Kinetic® treatment classes. – Addition of HDPE manufacturers. – Addition of flow diagram of Hydro-Kinetic® with phosphorus removal and UV disinfection.
2016-06-20	<ul style="list-style-type: none"> – Addition of the text “assemblers of systems” in the <i>section List manufacturers recognized for the components of the systems</i>.
2017-06-06	<ul style="list-style-type: none"> – Addition of material and Phos-4-Fade instead of Activated Alumina Filter.
2018-04-17	<ul style="list-style-type: none"> – Renewal of certificate.
2018-05-31	<ul style="list-style-type: none"> – Addition of Ciment Lacasse Ltée as new concrete manufacturer and system assembler and removal of Entreprises Chartier Inc.
2018-09-18	<ul style="list-style-type: none"> – Addition of Entreprises Chartier (2009) Inc. as new concrete manufacturer and system assembler.
2019-02-04	<ul style="list-style-type: none"> – Withdrawal of Entreprises Chartier (2009) Inc. as manufacturer and system assembler.
2019-07-18	<ul style="list-style-type: none"> – Update of the certificate according to the M2 changes to the standard and M1 changes to the protocol.
2019-09-06	<ul style="list-style-type: none"> – Correction of model 3780L (instead of 3870L).
2020-04-22	<ul style="list-style-type: none"> – Renewal of certificate.
2020-06-04	<ul style="list-style-type: none"> – Addition of models 1260L-3M, 1260L-UV-3M, 1260L-P-UV-3M, 1260L-P-3M, 1600L-3M, 1600L-UV-3M, 1600L-P-UV-3M and 1600L-P-3M and precision on the integration of UV reactors inside Bio-Film Reactor tank and Phos-4-Fade tank.
2022-02-18	<ul style="list-style-type: none"> – Withdrawal of Ciment Lacasse Ltée as manufacturer and system assembler.
2022-04-13	<ul style="list-style-type: none"> – Renewal of certificate.
2022-09-22	<ul style="list-style-type: none"> – Addition of models 1260L-DT and 1600L-DT for all Hydro-Kinetic® treatment classes.
2023-01-20	<ul style="list-style-type: none"> – Addition of Ciment Lacasse Ltée as concrete manufacturer and system assembler.
2023-10-02	<ul style="list-style-type: none"> – Precisions on all Hydro-Kinetic® models.
2023-11-30	<ul style="list-style-type: none"> – Addition of Béton architecturaux Breton B.A.B. inc. as concrete manufacturer and system assembler.