

# **SPECIFICATION SHEET NUMBER S-221**

## **MATERIAL SPECIFICATIONS:**

1. CONCRETE - Concrete shall have a minimum 28 day compressive strength of 4000 psi. The mix shall be so designed as to produce a minimum 24 hour strength of 1250 psi. Test method shall conform to ASTM standard C-39. The concrete mix shall conform to the current edition of the following ASTM standards:

C 33	Concrete Aggregates	C 260	Airetraining Admixtures
C 94	Ready-mixed	C 494	Chemical Admixtures
C 150	Portland Cement		

Concrete shall contain a minimum of six sacks of Type II Portland Cement. Although strength and other requirement may be met with a lesser cement content due to the possibility of acidic nature of the contents and the desired watertight integrity, a cement mix is necessary.

2. STEEL REINFORCEMENT - Structural reinforcing shall consist of No. 5 Grade 40 bar , with secondary reinforcing No. 3 Grade 40 bar. Deformed reinforcing bar and fabricated mats shall conform to the current editions of the following ASTM standards.

A 184 Fabricated Deformed Steel Bar Mat  
A 615 Deformed Plain Billet-Steel Reinforcing bar

3. SECONDARY REINFORCEMENT - (Optionally used per manufacturer's discretion). Three dimensional secondary reinforcement shall be synthetic fiber. Fiber shall be so designed so as to increase early strength, compressive strength, impact resistance and reduce absorption. Rate of addition shall be per manufacturer's recommendations.

## **GENERAL NOTES:**

1. The assembly is designed for direct H-20 vehicle loading of tank top. Design is for installation in a parking or service traffic area. Installations where highway impact loading is anticipated a traffic pavement slab shall be installed to isolate the tank from direct impact loading.
2. Extensions to grade are optionally available per Pro-Cast Products Drawing No. 1099 through 1102. Manhole extensions to grade are optionally available per Pro-Cast Products Drawing No. 1131.
3. Access opening may be covered by fabricated steel covers as detailed on Pro-Cast Products Drawings 1112, 1118, 1119, numbers 2 and 3 size dictates, or with cast iron covers shown on Pro-Cast Products Drawings 1124 and 1125.
4. Back vent opening through the baffle shall be a minimum of 25 square inches.
5. Tank body to cap joint sealed with butyl rubber joint sealant produce seal against passing ground water. Sealant shall conform to SS-S-210, SS-S-210A and ASTM C 990.
6. Internal fittings are fabricated from schedule 40 DWV ABS pipe and fittings. Fittings shall conform to ASTM D 2661, D 3311, and ANSI 119.1 and A119.2.

7. Inlet and outlet fittings shall penetrate exterior walls through low pressure synthetic pipe seal. For additional seal information, see Pro-Cast Products Specification Sheet No. 250.

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8. As required, an optionally available watertight seal may be requested. The seal shall be made from two-part polyurethane sealant providing a watertight, flexible, resilient, tear-resistant seal. Material shall conform to TT-S-227e and USAS1 A 116.1. Seal shall be suitable to withstand 5.6 psi static water pressure. Cured material shall obtain a hardness of Shore A, elongation ability of 750 percent.

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**SPECIFICATION SHEET NUMBER S-222**

**MATERIAL SPECIFICATIONS:**

1. CONCRETE - Concrete shall have a minimum 28 day compressive strength of 4000 psi. The mix shall be so designed as to produce a minimum 24 hour strength of 1250 psi. Test method shall conform to ASTM standard C-39. The concrete mix shall conform to the current edition of the following ASTM standards:

C 33	Concrete Aggregates	C 260	Airetraining Admixtures
C 94	Ready-mixed	C 494	Chemical Admixtures
C 150	Portland Cement		

Concrete shall contain a minimum of six sacks of Type II Portland Cement. Although strength and other requirement may be met with a lesser cement content due to the possibility of acidic nature of the contents and the desired watertight integrity, a cement mix is necessary.

2. STEEL REINFORCEMENT - Structural reinforcing shall consist of No. 5 Grade 40 bar , with secondary reinforcing No. 3 Grade 40 bar. Deformed reinforcing bar and fabricated mats shall conform to the current editions of the following ASTM standards.

A 184 Fabricated Deformed Steel Bar Mat  
A 615 Deformed Plain Billet-Steel Reinforcing bar

3. SECONDARY REINFORCEMENT - (Optionally used per manufacturer's discretion). Three dimensional secondary reinforcement shall be synthetic fiber. Fiber shall be so designed so as to increase early strength, compressive strength, impact resistance and reduce absorption. Rate of addition shall be per manufacturer's recommendations.

**GENERAL NOTES:**

1. The assembly is designed to terminate at ground surface. Surface loading design is for 250 psf.

2. Extensions to grade are optionally available per Pro-Cast Products Drawing No. 1099 through 1102. Manhole extensions to grade are optionally available per Pro-Cast Products Drawing No. 1131.
3. Access openings may be covered by fabricated steel covers on Pro-Cast Products, Inc. Drawings 1112, 1118, 1119 numbers 1 and 2 as size dictates.
4. Back vent opening through baffle wall shall consist of the open area upper most in the tank. The square inch opening shall run from 115 for the 750 through 1200 gallon size and 134 for the 1500.
5. Tank body to cap joint sealed with butyl rubber joint sealant to produce seal against passing ground water. Sealant shall conform to SS-S-210, SS-S-210A and ASTM C 990.
6. Internal fittings are fabricated from schedule 40 DWV ABS pipe and fittings. Fittings shall conform to ASTM D 2661, D 3311, and ANSI 119.1 and A119.2.
7. Inlet and outlet fittings shall penetrate exterior walls through low pressure synthetic pipe seal. For additional seal information, see Pro-Cast Products Specification Sheet No. 250.
8. Flow area opening shall maintain a minimum of fifty percent of the liquid profile open. Opening shall be located to maximize the movement of movement of material at the liquid surface.

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9. As required, an optionally available watertight seal may be requested. The seal shall be made from two-part polyurethane sealant providing a watertight, flexible, resilient, tear-resistant seal. Material shall conform to TT-S-227e and USAS1 A 116.1. Seal shall be suitable to withstand 5.6 psi static water pressure. Cured material shall obtain a hardness of Shore A, elongation ability of 750 percent.

***PRO-CAST PRODUCTS INC.***

## **SPECIFICATION SHEET NUMBER S-223**

### **MATERIAL SPECIFICATIONS:**

1. CONCRETE - Concrete shall have a minimum 28 day compressive strength of 4000 psi. The mix shall be so designed as to produce a minimum 24 hour strength of 1250 psi. Test method shall conform to ASTM standard C-39. The concrete mix shall conform to the current edition of the following ASTM standards:

C 33	Concrete Aggregates	C 260	Airetraining Admixtures
C 94	Ready-mixed	C 494	Chemical Admixtures

C 150 Portland Cement

Concrete shall contain a minimum of six sacks of Type II Portland Cement. Although strength and other requirement may be met with a lesser cement content due to the possibility of acidic nature of the contents and the desired watertight integrity, a cement mix is necessary.

2. STEEL REINFORCEMENT - Structural reinforcing shall consist of No. 5 Grade 40 bar , with secondary reinforcing No. 3 Grade 40 bar. Deformed reinforcing bar and fabricated mats shall conform to the current editions of the following ASTM standards.

A 184 Fabricated Deformed Steel Bar Mat

A 615 Deformed Plain Billet-Steel Reinforcing bar

3. SECONDARY REINFORCEMENT - (Optionally used per manufacturer's discretion). Three dimensional secondary reinforcement shall be synthetic fiber. Fiber shall be so designed so as to increase early strength, compressive strength, impact resistance and reduce absorption. Rate of addition shall be per manufacturer's recommendations.

**GENERAL NOTES:**

1. The assembly is designed to terminate at ground surface. Surface loading design is for 250 psf.
2. Extensions to grade are optionally available per Pro-Cast Products Drawing No. 1099 through 1102. Manhole extensions to grade are optionally available per Pro-Cast Product Drawing No. 1131.
3. Access openings may be covered by fabricated steel covers on Pro-Cast Products, Inc. Drawings 1112, 1118, 1119 numbers 1 and 2 as size dictates.
4. Back vent opening through baffle wall shall consist of the open area upper most in the tank. The square inch opening shall run from 115 for the 750 through 1200 gallon size and 134 for the 1500.
5. Tank body to cap joint sealed with butyl rubber joint sealant to produce seal against passing ground water. Sealant shall conform to SS-S-210, SS-S-210A and ASTM C 990.
6. Internal fittings are fabricated from schedule 40 DWV ABS pipe and fittings. Fittings shall conform to ASTM D 2661, D 3311, and ANSI 119.1 and A119.2.
7. Inlet and outlet fittings shall penetrate exterior walls through low pressure synthetic pipe seal. For additional seal information, see Pro-Cast Product Specification Sheet No. 250.
8. Flow area opening shall maintain a minimum of fifty percent of the liquid profile open. Opening shall be located to maximize the movement of movement of material at the liquid surface.

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## **SPECIFICATION SHEET NUMBER S-223**

9. As required, an optionally available watertight seal may be requested. The seal shall be made from two-part polyurethane sealant providing a watertight, flexible, resilient, tear-resistant seal. Material shall conform to TT-S-227e and USAS1 A 116.1. Seal shall be suitable to withstand 5.6 psi static water pressure. Cured material shall obtain a hardness of Shore A, elongation ability of 750 percent.

***PRO-CAST PRODUCTS INC.***

## **SPECIFICATION SHEET NUMBER S-224**

### **MATERIAL SPECIFICATIONS:**

1. CONCRETE - Concrete shall have a minimum 28 day compressive strength of 4000 psi. The mix shall be so designed as to produce a minimum 24 hour strength of 1250 psi. Test method shall conform to ASTM standard C-39. The concrete mix shall conform to the current edition of the following ASTM standards:

C 33	Concrete Aggregates	C 260	Airetraining Admixtures
C 94	Ready-mixed	C 494	Chemical Admixtures
C 150	Portland Cement		

Concrete shall contain a minimum of six sacks of Type II Portland Cement. Although strength and other requirement may be met with a lesser cement content due to the possibility of acidic nature of the contents and the desired watertight integrity, a cement mix is necessary.

2. STEEL REINFORCEMENT - Structural reinforcing shall consist of No. 5 Grade 40 bar , with secondary reinforcing No. 3 Grade 40 bar. Deformed reinforcing bar and fabricated mats shall conform to the current editions of the following ASTM standards.

A 184 Fabricated Deformed Steel Bar Mat  
A 615 Deformed Plain Billet-Steel Reinforcing bar

3. SECONDARY REINFORCEMENT - (Optionally used per manufacturer's discretion). Three dimensional secondary reinforcement shall be synthetic fiber. Fiber shall be so designed so as to increase early strength, compressive strength, impact resistance and reduce absorption. Rate of addition shall be per manufacturer's recommendations.

### **GENERAL NOTES:**

1. The assembly is designed for direct H-20 vehicle loading of tank top. Design is for installation in a parking or service traffic area. Installations where highway impact loading is anticipated a traffic pavement slab shall be installed to isolate the tank from direct impact loading.
2. Extensions to grade are optionally available per Pro-Cast Products Drawing No. 1099 through 1102. Manhole extensions to grade are optionally available per Pro-Cast Products Drawing No. 1131.

3. Access opening may be covered by fabricated steel covers as detailed on Pro-Cast Products Drawings 1112, 1118, 1119, numbers 2 and 3 size dictates, or with cast iron covers shown on Pro-Cast Products Drawings 1124 and 1125.
4. Back vent opening through the baffle shall be a minimum of 25 square inches.
5. Tank body to cap joint sealed with butyl rubber joint sealant produce seal against passing ground water. Sealant shall conform to SS-S-210, SS-S-210A and ASTM C 990.
6. Internal fittings are fabricated from schedule 40 DWV ABS pipe and fittings. Fittings shall conform to ASTM D 2661, D 3311, and ANSI 119.1 and A119.2.
7. Inlet and outlet fittings shall penetrate exterior walls through low pressure synthetic pipe seal. For additional seal information, see Pro-Cast Products Specification Sheet No. 250.

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8. Flow area opening shall maintain a minimum of fifty percent of the liquid profile open. Opening shall be located to maximize the movement of material at the liquid surface.
9. As required, an optionally available watertight seal may be requested. The seal shall be made from two-part polyurethane sealant providing a watertight, flexible, resilient, tear-resistant seal. Material shall conform to TT-S-227e and USAS1 A 116.1. Seal shall be suitable to withstand 5.6 psi static water pressure. Cured material shall obtain a hardness of Shore A, elongation ability of 750 percent.

***PRO-CAST PRODUCTS INC.***

**SPECIFICATION SHEET NUMBER S-225**

**MATERIAL SPECIFICATIONS:**

1. CONCRETE - Concrete shall have a minimum 28 day compressive strength of 4000 psi. The mix shall be so designed as to produce a minimum 24 hour strength of 1250 psi. Test method shall conform to ASTM standard C-39. The concrete mix shall conform to the current edition of the following ASTM standards:

C 33 Concrete Aggregates	C 260 Airetraining Admixtures
C 94 Ready-mixed	C 494 Chemical Admixtures
C 150 Portland Cement	

Concrete shall contain a minimum of six sacks of Type II Portland Cement. Although strength and other requirement may be met with a lesser cement content due to the possibility of acidic nature of the contents and the desired watertight integrity, a cement mix is necessary.

2. STEEL REINFORCEMENT - Structural reinforcing shall consist of No. 5 Grade 40 bar , with secondary reinforcing No. 3 Grade 40 bar. Deformed reinforcing bar and fabricated mats shall conform to the current editions of the following ASTM standards.

A 184 Fabricated Deformed Steel Bar Mat  
A 615 Deformed Plain Billet-Steel Reinforcing bar

3. SECONDARY REINFORCEMENT - (Optionally used per manufacturer's discretion). Three dimensional secondary reinforcement shall be synthetic fiber. Fiber shall be so designed so as to increase early strength, compressive strength, impact resistance and reduce absorption. Rate of addition shall be per manufacturer's recommendations.

**GENERAL NOTES:**

1. The assembly is designed to terminate at ground surface. Surface loading design is for 250 psf.
2. Extensions to grade are optionally available per Pro-Cast Products Drawing No. 1099 through 1102. Manhole extensions to grade are optionally available per Pro-Cast Product Drawing No. 1131.
3. Access openings may be covered by fabricated steel covers on Pro-Cast Products, Inc. Drawings 1112, 1118, 1119 numbers 1 and 2 as size dictates.
4. Back vent opening through baffle wall shall consist of the open area upper most in the tank. The square inch opening shall run from 115 for the 750 through 1200 gallon size and 134 for the 1500.
5. Tank body to cap joint sealed with butyl rubber joint sealant to produce seal against passing ground water. Sealant shall conform to SS-S-210, SS-S-210A and ASTM C 990.
6. Internal fittings are fabricated from schedule 40 DWV ABS pipe and fittings. Fittings shall conform to ASTM D 2661, D 3311, and ANSI 119.1 and A119.2.
7. Inlet and outlet fittings shall penetrate exterior walls through low pressure synthetic pipe seal. For additional seal information, see Pro-Cast Product Specification Sheet No. 250.
8. Flow area opening shall maintain a minimum of fifty percent of the liquid profile open. Opening shall be located to maximize the movement of material at the liquid surface.

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## **SPECIFICATION SHEET NUMBER S-225**

9. As required, an optionally available watertight seal may be requested. The seal shall be made from two-part polyurethane sealant providing a watertight, flexible, resilient, tear-resistant seal. Material shall conform to TT-S-227e and USAS1 A 116.1. Seal shall be suitable to withstand 5.6 psi static water pressure. Cured material shall obtain a hardness of Shore A, elongation ability of 750 percent.

***PRO-CAST PRODUCTS INC.***

## **SPECIFICATION SHEET NUMBER S-226**

### **MATERIAL SPECIFICATIONS:**

1. CONCRETE - Concrete shall have a minimum 28 day compressive strength of 4000 psi. The mix shall be so designed as to produce a minimum 24 hour strength of 1250 psi. Test method shall conform to ASTM standard C-39. The concrete mix shall conform to the current edition of the following ASTM standards:

C 33	Concrete Aggregates	C 260	Airetraining Admixtures
C 94	Ready-mixed	C 494	Chemical Admixtures
C 150	Portland Cement		

Concrete shall contain a minimum of six sacks of Type II Portland Cement. Although strength and other requirement may be met with a lesser cement content due to the possibility of acidic nature of the contents and the desired watertight integrity, a cement mix is necessary.

2. STEEL REINFORCEMENT - Structural reinforcing shall consist of No. 5 Grade 40 bar , with secondary reinforcing No. 3 Grade 40 bar. Deformed reinforcing bar and fabricated mats shall conform to the current editions of the following ASTM standards.

A 184 Fabricated Deformed Steel Bar Mat  
A 615 Deformed Plain Billet-Steel Reinforcing bar

3. SECONDARY REINFORCEMENT - (Optionally used per manufacturer's discretion). Three dimensional secondary reinforcement shall be synthetic fiber. Fiber shall be so designed so as to increase early strength, compressive strength, impact resistance and reduce absorption. Rate of addition shall be per manufacturer's recommendations.

### **GENERAL NOTES:**

1. The assembly is designed to terminate at ground surface. Surface loading design is for 250 psf.
2. Extensions to grade are optionally available per Pro-Cast Products Drawing No. 1099 through 1102. Manhole extensions to grade are optionally available per Pro-Cast Product Drawing No. 1131.
3. Access openings may be covered by fabricated steel covers on Pro-Cast Products, Inc. Drawings 1112, 1118, 1119 numbers 1 and 2 as size dictates.

4. Back vent opening through baffle wall shall consist of the open area upper most in the tank. The square inch opening shall run from 115 for the 750 through 1200 gallon size and 134 for the 1500.
5. Tank body to cap joint sealed with butyl rubber joint sealant to produce seal against passing ground water. Sealant shall conform to SS-S-210, SS-S-210A and ASTM C 990.
6. Internal fittings are fabricated from schedule 40 DWV ABS pipe and fittings. Fittings shall conform to ASTM D 2661, D 3311, and ANSI 119.1 and A119.2.
7. Inlet and outlet fittings shall penetrate exterior walls through low pressure synthetic pipe seal. For additional seal information, see Pro-Cast Products Specification Sheet No. 250.
8. Flow area opening shall maintain a minimum of fifty percent of the liquid profile open. Opening shall be located to maximize the movement of material at the liquid surface.

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### **SPECIFICATION SHEET NUMBER S-226**

9. As required, an optionally available watertight seal may be requested. The seal shall be made from two-part polyurethane sealant providing a watertight, flexible, resilient, tear-resistant seal. Material shall conform to TT-S-227e and USAS1 A 116.1. Seal shall be suitable to withstand 5.6 psi static water pressure. Cured material shall obtain a hardness of Shore A, elongation ability of 750 percent.

***PRO-CAST PRODUCTS INC.***

### **SPECIFICATION SHEET NUMBER S-227**

**MATERIAL SPECIFICATIONS:**

1. CONCRETE - Concrete shall have a minimum 28 day compressive strength of 4000 psi. The mix shall be so designed as to produce a minimum 24 hour strength of 1250 psi. Test method shall conform to ASTM standard C-39. The concrete mix shall conform to the current edition of the following ASTM standards:  

C 33	Concrete Aggregates	C 260	Airetraining Admixtures
C 94	Ready-mixed	C 494	Chemical Admixtures
C 150	Portland Cement		

Concrete shall contain a minimum of six sacks of Type II Portland Cement. Although strength and other requirement may be met with a lesser cement content due to the possibility of acidic nature of the contents and the desired watertight integrity, a cement mix is necessary.

2. STEEL REINFORCEMENT - Structural reinforcing shall consist of No. 5 Grade 40 bar , with secondary reinforcing No. 3 Grade 40 bar. Deformed reinforcing bar and fabricated mats shall conform to the current editions of the following ASTM standards.

A 184 Fabricated Deformed Steel Bar Mat  
A 615 Deformed Plain Billet-Steel Reinforcing bar

3. SECONDARY REINFORCEMENT - (Optionally used per manufacturer's discretion). Three dimensional secondary reinforcement shall be synthetic fiber. Fiber shall be so designed so as to increase early strength, compressive strength, impact resistance and reduce absorption. Rate of addition shall be per manufacturer's recommendations.

**GENERAL NOTES:**

1. The assembly is designed for direct H-20 vehicle loading of tank top. Design is for installation in a parking or service traffic area. Installations where highway impact loading is anticipated. a traffic pavement slab shall be installed to isolate the tank from direct impact loading.
2. Extensions to grade are optionally available per Pro-Cast Products Drawing No. 1099 through 1102. Manhole extensions to grade are optionally available per Pro-Cast Products Drawing No. 1131.
3. Access opening may be covered by fabricated steel covers as detailed on Pro-Cast Products Drawings 1112, 1118, 1119, numbers 2 and 3 size dictates, or with cast iron covers shown on Pro-Cast Drawings 1124 and 1125.
4. Back vent opening through the baffle shall be a minimum of 25 square inches.
5. Tank body to cap joint sealed with butyl rubber joint sealant produce seal against passing ground water. Sealant shall conform to SS-S-210, SS-S-210A and ASTM C 990.
6. Internal fittings are fabricated from schedule 40 DWV ABS pipe and fittings. Fittings shall conform to ASTM D 2661, D 3311, and ANSI 119.1 and A119.2.
7. Inlet and outlet fittings shall penetrate exterior walls through low pressure synthetic pipe seal. For additional seal information, see Pro-Cast Products Specification Sheet No. 250.

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**SPECIFICATION SHEET NUMBER S-227**

8. As required, an optionally available watertight seal may be requested. The seal shall be made from two-part polyurethane sealant providing a watertight, flexible, resilient, tear-resistant seal. Material shall conform to TT-S-227e and USAS1 A 116.1. Seal shall be suitable to withstand 5.6 psi static water pressure. Cured material shall obtain a hardness of Shore A, elongation ability of 750 percent.

***PRO-CAST PRODUCTS INC.***

# **SPECIFICATION SHEET NUMBER S-228**

## **MATERIAL SPECIFICATIONS:**

1. CONCRETE - Concrete shall have a minimum 28 day compressive strength of 4000 psi. The mix shall be so designed as to produce a minimum 24 hour strength of 1250 psi. Test method shall conform to ASTM standard C-39. The concrete mix shall conform to the current edition of the following ASTM standards:

C 33 Concrete Aggregates      C 260 Airetraining Admixtures  
C 94 Ready-mixed              C 494 Chemical Admixtures  
C 150 Portland Cement

Concrete shall contain a minimum of six sacks of Type II Portland Cement. Although strength and other requirement may be met with a lesser cement content due to the possibility of acidic nature of the contents and the desired watertight integrity, a cement mix is necessary.

2. STEEL REINFORCEMENT - Structural reinforcing shall consist of No. 5 Grade 40 bar , with secondary reinforcing No. 3 Grade 40 bar. Deformed reinforcing bar and fabricated mats shall conform to the current editions of the following ASTM standards.

A 184 Fabricated Deformed Steel Bar Mat

A 615 Deformed Plain Billet-Steel Reinforcing bar

3. SECONDARY REINFORCEMENT - (Optionally used per manufacturer's discretion). Three dimensional secondary reinforcement shall be synthetic fiber. Fiber shall be so designed so as to increase early strength, compressive strength, impact resistance and reduce absorption. Rate of addition shall be per manufacturer's recommendations.

## **GENERAL NOTES:**

1. The assembly is designed to terminate at ground surface. Surface loading design is for 250 psf.
2. Extensions to grade are optionally available per Pro-Cast Products Drawing No. 1099 through 1102. Manhole extensions to grade are optionally available per Pro-Cast Products Drawing No. 1131.
3. Access openings may be covered by fabricated steel covers on Pro-Cast Products, Inc. Drawings 1112, 1118, 1119 numbers 1 and 2 as size dictates.
4. Back vent opening through baffle wall shall consist of the open area upper most in the tank. The square inch opening shall run from 115 for the 750 through 1200 gallon size and 134 for the 1500.
5. Tank body to cap joint sealed with butyl rubber joint sealant to produce seal against passing ground water. Sealant shall conform to SS-S-210, SS-S-210A and ASTM C 990.
6. Internal fittings are fabricated from schedule 40 DWV ABS pipe and fittings. Fittings shall conform to ASTM D 2661, D 3311, and ANSI 119.1 and A119.2.
7. Inlet and outlet fittings shall penetrate exterior walls through low pressure synthetic pipe seal. For additional seal information, see Pro-Cast Product Specification Sheet No. 250.

8. Flow area opening shall maintain a minimum of fifty percent of the liquid profile open. Opening shall be located to maximize the movement of movement of material at the liquid surface.

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**SPECIFICATION SHEET NUMBER S-228**

9. As required, an optionally available watertight seal may be requested. The seal shall be made from two-part polyurethane sealant providing a watertight, flexible, resilient, tear-resistant seal. Material shall conform to TT-S-227e and USAS1 A 116.1. Seal shall be suitable to withstand 5.6 psi static water pressure. Cured material shall obtain a hardness of Shore A, elongation ability of 750 percent.

***PRO-CAST PRODUCTS INC.***

**SPECIFICATION SHEET NUMBER S-229**

**MATERIAL SPECIFICATIONS:**

1. CONCRETE - Concrete shall have a minimum 28 day compressive strength of 4000 psi. The mix shall be so designed as to produce a minimum 24 hour strength of 1250 psi. Test method shall conform to ASTM standard C-39. The concrete mix shall conform to the current edition of the following ASTM standards:

C 33	Concrete Aggregates	C 260	Airetraining Admixtures
C 94	Ready-mixed	C 494	Chemical Admixtures
C 150	Portland Cement		

Concrete shall contain a minimum of six sacks of Type II Portland Cement. Although strength and other requirement may be met with a lesser cement content due to the possibility of acidic nature of the contents and the desired watertight integrity, a cement mix is necessary.

2. STEEL REINFORCEMENT - Structural reinforcing shall consist of No. 5 Grade 40 bar , with secondary reinforcing No. 3 Grade 40 bar. Deformed reinforcing bar and fabricated mats shall conform to the current editions of the following ASTM standards.

A 184 Fabricated Deformed Steel Bar Mat  
A 615 Deformed Plain Billet-Steel Reinforcing bar

3. SECONDARY REINFORCEMENT - (Optionally used per manufacturer's discretion). Three dimensional secondary reinforcement shall be synthetic fiber. Fiber shall be so designed so as to increase early strength, compressive strength, impact resistance and reduce absorption. Rate of addition shall be per manufacturer's recommendations.

**GENERAL NOTES:**

- 1 The assembly is designed to terminate at ground surface. Surface loading design is for 250 nsf

2. Extensions to grade are optionally available per Pro-Cast Products Drawing No. 1099 through 1102. Manhole extensions to grade are optionally available per Pro-Cast Product Drawing No. 1131.
3. Access openings may be covered by fabricated steel covers on Pro-Cast Products, Inc. Drawings 1112, 1118, 1119 numbers 1 and 2 as size dictates.
4. Back vent opening through baffle wall shall consist of the open area upper most in the tank. The square inch opening shall run from 115 for the 750 through 1200 gallon size and 134 for the 1500.
5. Tank body to cap joint sealed with butyl rubber joint sealant to produce seal against passing ground water. Sealant shall conform to SS-S-210, SS-S-210A and ASTM C 990.
6. Internal fittings are fabricated from schedule 40 DWV ABS pipe and fittings. Fittings shall conform to ASTM D 2661, D 3311, and ANSI 119.1 and A119.2.
7. Inlet and outlet fittings shall penetrate exterior walls through low pressure synthetic pipe seal. For additional seal information, see Pro-Cast ProductS Specification Sheet No. 250.
8. Flow area opening shall maintain a minimum of fifty percent of the liquid profile open. Opening shall be located to maximize the movement of movement of material at the liquid surface.

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## **SPECIFICATION SHEET NUMBER S-229**

9. As required, an optionally available watertight seal may be requested. The seal shall be made from two-part polyurethane sealant providing a watertight, flexible, resilient, tear-resistant seal. Material shall conform to TT-S-227e and USAS1 A 116.1. Seal shall be suitable to withstand 5.6 psi static water pressure. Cured material shall obtain a hardness of Shore A, elongation ability of 750 percent.

***PRO-CAST PRODUCTS INC.***

# **SPECIFICATION SHEET NUMBER S-230**

## **MATERIAL SPECIFICATIONS:**

1. CONCRETE - Concrete shall have a minimum 28 day compressive strength of 4000 psi. The mix shall be so designed as to produce a minimum 24 hour strength of 1250 psi. Test method shall conform to ASTM standard C-39. The concrete mix shall conform to the current edition of the following ASTM standards:

C 33	Concrete Aggregates	C 260	Airetraining Admixtures
C 94	Ready-mixed	C 494	Chemical Admixtures
C 150	Portland Cement		

Concrete shall contain a minimum of six sacks of Type II Portland Cement. Although strength and other requirement may be met with a lesser cement content due to the possibility of acidic nature of the contents and the desired watertight integrity, a cement mix is necessary.

2. STEEL REINFORCEMENT - Structural reinforcing shall consist of No. 5 Grade 40 bar , with secondary reinforcing No. 3 Grade 40 bar. Deformed reinforcing bar and fabricated mats shall conform to the current editions of the following ASTM standards.

A 184 Fabricated Deformed Steel Bar Mat  
A 615 Deformed Plain Billet-Steel Reinforcing bar

3. SECONDARY REINFORCEMENT - (Optionally used per manufacturer's discretion). Three dimensional secondary reinforcement shall be synthetic fiber. Fiber shall be so designed so as to increase early strength, compressive strength, impact resistance and reduce absorption. Rate of addition shall be per manufacturer's recommendations.

## **GENERAL NOTES:**

1. The assembly is designed to terminate at ground surface. Surface loading design is for 250 psf.
2. Extensions to grade are optionally available per Pro-Cast Products Drawing No. 1099 through 1102. Manhole extensions to grade are optionally available per Pro-Cast Products Drawing No. 1131.
3. Access openings may be covered by fabricated steel covers on Pro-Cast Products, Inc. Drawings 1112, 1118, 1119 numbers 1 and 2 as size dictates.
4. Back vent opening through baffle wall shall consist of the open area upper most in the tank. The square inch opening shall run from 115 for the 750 through 1200 gallon size and 134 for the 1500.
5. Tank body to cap joint sealed with butyl rubber joint sealant to produce seal against passing ground water. Sealant shall conform to SS-S-210, SS-S-210A and ASTM C 990.
6. Internal fittings are fabricated from schedule 40 DWV ABS pipe and fittings. Fittings shall conform to ASTM D 2661, D 3311, and ANSI 119.1 and A119.2.

7. Inlet and outlet fittings shall penetrate exterior walls through low pressure synthetic pipe seal. For additional seal information, see Pro-Cast ProductS Specification Sheet No. 250.
8. Flow area opening shall maintain a minimum of fifty percent of the liquid profile open. Opening shall be located to maximize the movement of movement of material at the liquid surface.

***PRO-CAST PRODUCTS INC.***

### **SPECIFICATION SHEET NUMBER S-230**

9. As required, an optionally available watertight seal may be requested. The seal shall be made from two-part polyurethane sealant providing a watertight, flexible, resilient, tear-resistant seal. Material shall conform to TT-S-227e and USAS1 A 116.1. Seal shall be suitable to withstand 5.6 psi static water pressure. Cured material shall obtain a hardness of Shore A, elongation ability of 750 percent.

***PRO-CAST PRODUCTS INC.***