

B117-03

B117

**1**

1.1

X1

1.2

1.3

-

1.4

**2**

2.1 ASTM

B368

(CASS )

D609

D1193

D1654

E70

pH

E691

G85

( )

3

3.1

3.2

3.2.1

3.2.2

3.3

**4**

4.1

4.2

4.3

4.4

4.5

D 1193

**5**

5.1

**6**

6.1

6.2

D609

D609

6.3

6.4

D1654

6.5

1-

**7**

7.1

7.1.1

1) v ' \$v

+ " %' &  
+ " %' '  
+ " %' (  
&

,  
, " % ) w % - ) 8 % % ' '  
\$ " ' %  
\$ " % %  
\$ " ' dda %

%

5 6

---

\$ " ' %  
\$ " % %  
\$ " ' dda  
\$ " \$ %

---

5 ) %  
\$ " \$ ) ' × =  
% % % ) % \$ " \$ ) '  
% \$ \$ \$ ' ) " & + % ) ' % ' , +  
) %  
\$ " \$ ) '  
% \$ \$ \$ % \$ " - )  
- ) % % \$ ) '  
% \$ ) ' % ) % % \$ ) ' %  
% \$ \$ \$ ) ' ) ' % \$ \$ \$  
\$ " \$ ) '

&\$\$ )&," ' )% %\$"\* fl&' "' + Ł  
 &\$\$ )&," ' &\$\$ &\$\$ž\$\$\$\$ &\$\$ž\$\$\$\$ × \$" )' fl  
 Ł=%\$ž\*\$\$ %\$"\*  
 6  
 &) ++ (% \*% &)  
 ++ %\$&)) %\$(\$\$  
 ,"& P< ' ) -) P<  
 \*) +&fl ' Ł  
 ( 9+\$ &) ++ P<  
 P< P<  
 ' — P< P<  
 % P< ' ) -)  
 P< P<  
 P< \*) ' ) -)  
 \*) +& P< )\$  
 '\$ P< P<  
 \*) +& ' ) -) P<  
 & ' ) -) P< ' ) -)  
 (, ' ) -) P<  
 ' ' ) -)  
 P< \*) +& ' ) -) P<  
 (—

5—PH ACS

**9**

9.1

6

2

6—

/

/

9.2

(X1.4.1)

(\* (- %%( %&%

\_"'

&  
\_"'

+

&

& ' ) -)

kPa		PSI	
83	46	12	114
96	47	14	117
110	48	16	119
124	49	18	121
7---			10.2

X3

10

10.1

---

' ) Ž%' %' %' + -) Ž&' '

+

, —

10.2

---

--  
%\$ fl "-( 7 , \$ fl%&" (  
7  
%\$— &) ++ %" \$&)) %" \$( \$\$  
) %\$\$  
%\$ (\$ %  
%% %"  
'" ( )"% %"  
%e— & \*% ( \*%  
%\$"

7c` `eVhcf g!  
: c[ VUaVef!  
5hca]zef hckef!

—

H  
%

%%  
%%' %

%\$

%&  
12.1

%&—

&(

13

13.1

% "%' %

% "& ' , %\$\$

%&

%&" %

%&

%&" %

%&"%' %

%&"%' &

%&"%' '

%&"%' ' "% , \$ %&" (

%&"%' ' "& ' ) -)

%&"%' ' "' P<

%&" &

%&"'

%&" (

%&" ) \*"

%&" \*

%&" +

%&" ,

%!

16

16.1



**X1.1**

---

/	/
kPa	kPa

---

X1.4

X1.4.1

X1X1.1  $\hat{U} - \ddot{u} S \square \uparrow \delta \ddot{u} 0 \backslash 5 \hat{a} f \frac{1}{2}$   
X1.441

X%' &

X%' '

%- ! - \$ %&) v

%-

&-

' -

(- )

)-

\* -

+ -

, -

- -

%\$ -

%% -

%& -

%&5 -

% -

%& - %&

%\*

%ot %

%\* - -

%ot

%& %

%ot - -

% - -

% - -

&\$ - -

&% - -

&-

X%' %

—

X%' %

ž

! - \$ %&) v

%—

&—

' —

(—

)—

\*—

+—

, —

X%' &

1.) × &" ( ) × ,

X%' '

X&

X&" %

X&" %

X&" &

6%8%+

!

6' \*,

; , )

6%8%+

; , )

% )w% -) 8%g'  
& P< \*") +" &  
' ' )ž% % %' + -)ž&'

( 80 1.\$ &' \$

X&'%

X'

X' "% ---

X' "& --- +\*x %&+x "\$, ' "\$x )" \$x  
\$' '\$' %ž G59%\$\$,  
X' "' ---

X' "( --- %' \$ %&+  
)" \$ ' \$v

X' ") --- (\* %'  
X' "\*" ---

&\$ & 8%g' %\$

%\$\$\$                      %' %                      %\$\$\$                      8%'  
                                  %\$  
                                  % " & "  
 X' " +                      ———  
                                  X' "%  
 ———                      BC" =  
 f=) %                      7j =G#Uj [ž                      % G=  
 \_\_\_\_\_  
                                  G                      7j ž%                      fž  
 \_\_\_\_\_  
 \_\_\_\_\_

                                 X' "&  
 ———BC" =                      F=) %                      7j =G#Uj [ž  
                                  % G=  
 \_\_\_\_\_  
                                  G                      7j ž%                      Fž  
 \_\_\_\_\_  
 \_\_\_\_\_

X' " + "%                      5GHA  
 ———  
 X' ",                      ———  
 X' ", "%                      '                      I BG; %\$\$, \$                      +\* × %&+  
 × \$",                      ' "\$× )" \$× "\$ '\$' %  
                                  f                      f                      9\* - %  
                                  f="\$" & G                      fIX' "%&  
 Gf                      f                      X' "%  
                                  7j                      )                      %\$%                      ž  
                                  +" (% f                      w &%%

X' ", "&

G -)% F 9\*-%  
F=\$" & G X' "&  
G F X' "& 7j ,  
% % ž %&" +% F w' \*%  
X' ", "'  
P< X'

---

- 5GHA FF ; % %\$\$

5GHA

5GHA

5GHA