HIGH PERFORMANCE WALL:
XR-S SERIES - CANADA
PATENT PENDING

DISCLAIMER

THE PROCEDURES PRESENTED IN THIS FIELD ASSEMBLY GUIDE ARE INTENDED AS A GUIDELINE ONLY, TO PROVIDE A BASIC UNDERSTANDING OF THE CONCEPTS INVOLVED IN THE PROPER AND EFFECTIVE INSTALLATION OF OUR HP+™ WALL SYSTEMS.

FOR CODE, DESIGN, AND INSTALLATION INFORMATION, PLEASE REFER TO THE BASF HP+™ TECHNICAL INSTALLATION MANUAL AND THE DRI ENGINEERING TECHNICAL EVALUATION REPORT.

IT REMAINS THE RESPONSIBILITY OF THE HP+™ WALL SYSTEMS INSTALLER AND/OR BUILDER TO MESURE ALL WORK PERFORMED CONFORMS TO APPLICABLE BUILDING CODE AND LABOUR SAFETY REGULATIONS GOVERNING THE CONSTRUCTION.

NOTE:

ALL REFERENCES TO MASTERSAL® NP1™ OR 1/2" OR 1" FOAM SEALANT TAPE IS FOR BEST PRACTICE TO IMPROVE AIR TIGHTNESS
HIGH PERFORMANCE WALL:
XR-S SERIES - CANADA

WALL COMPONENTS

- EXTERIOR CLADDING
- 1" x 3" VERT. STRAPPING @ 16" C/C OR 24" C/C
- 2" THICK NEOPOR® GRAPHITE - ENHANCED
  EXPANDED POLYSTYRENE INSULATION
  (1.35 lb/ft³ MINIMUM DENSITY)
- 1/2" PLYWOOD SHEATHING
- HORIZONTAL WOOD GIRTS: 2" x 4" STUDS
  WITH 1/2" PLYWOOD STRIPS, @ 24" C/C
- 2" x 4" STUDS @ 16" C/C OR 24" C/C
  BETWEEN 2' x 6" BOTTOM AND TOP PLATES
- 2 1/2" THICK WALLTITE® SPRAYED POLYURETHANE
  ONTO SURFACE OF RIGID INSULATION AND
  FILLING WOOD GIRT CAVITY
- 1/2" GYPSUM BOARD

* TYPICAL WALL NOMINAL R VALUE

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>R VALUE</th>
</tr>
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<tbody>
<tr>
<td>OUTSIDE AIR FILM</td>
<td>R 0.17</td>
</tr>
<tr>
<td>EXTERIOR CLADDING</td>
<td>+/- R 0.62</td>
</tr>
<tr>
<td>AIR SPACE 3/4&quot;</td>
<td>R 1.02</td>
</tr>
<tr>
<td>NEOPOR® SHEATHING 2&quot;</td>
<td>R 9.40</td>
</tr>
<tr>
<td>1/2&quot; PLYWOOD SHEATHING</td>
<td>R 0.62</td>
</tr>
<tr>
<td>WALLTITE® CM01, 2 1/2&quot;</td>
<td>R 13.5</td>
</tr>
<tr>
<td>AIR SPACE 3&quot;</td>
<td>R 1.02</td>
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<tr>
<td>GYPSUM BOARD 1/2&quot;</td>
<td>R 0.44</td>
</tr>
<tr>
<td>INSIDE AIR FILM</td>
<td>R 0.68</td>
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</table>

TOTAL R = R 27.47

* NOMINAL R VALUES DETERMINED ACCORDING TO
  COMMON INDUSTRY PRACTICE

FOR PLASTIC FOAM INSULATION AT HEADERS AND THERMAL BARRIER REFER TO THE APPLICABLE BUILDING CODE.

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* HP™ WALL SYSTEM XR-S SERIES FIELD ASSEMBLY GUIDE
STEP 1 - FLOOR ASSEMBLY

ENSURE SEAL OF ALL FLOOR FRAMING COMPONENTS ANCHORED TO FOUNDATION WALL

MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE

SEALING GASKET UNDER THE SILL PLATE (USE 2 PLIES IF TOP OF CONCRETE FOUNDATION WALL IS VERY ROUGH)
**STEP 2A - WALL FRAMING**

FIRST WALL FRAMING AND ASSEMBLY

1. **MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE**
   - 2" x 6" TOP PLATE

2. **HORIZONTAL WOOD GIRTS: 2" x 4" STUDS WITH 1/2" PLYWOOD STRIPS**

3. **2" x 4" STUD**

4. **2" x 6" STUD (FOR CORNER)**

5. **1/2" PLYWOOD STRIPS**

6. **2" x 6" BOTTOM PLATE**

**CROSS SECTION VIEW**

**FIELD ASSEMBLY GUIDE**

(2019-10-21)
STEP 3A - EXTERIOR PLYWOOD SHEATHING INSTALLATION

INSTALL PLYWOOD SHEATHING

NOTE:
FOR SHEATHING FASTENERS AND SPACING
REFER TO THE BASF HP+™ TECHNICAL INSTALLATION MANUAL
AND THE DJ ENGINEERING TECHNICAL EVALUATION REPORT.

EXTEND PLYWOOD SHEATHING TO COVER HEADER AT THIS STAGE OR LATER
**STEP 3B - EXTERIOR INSULATION**

INSTALL NEOPOR® GRAPHITE - ENHANCED EXPANDED POLYSTYRENE INSULATING SHEATHING

**NOTE:**
FOR SHEATHING FASTENERS AND SPACING
REFER TO THE BASF HP+™ TECHNICAL INSTALLATION MANUAL
AND THE DrJ ENGINEERING TECHNICAL EVALUATION REPORT.

6" C/C

INSULATION TO COVER HEADER AT THIS STAGE OR LATER
NOTE:
NEOPOR'S FASTENERS ARE NOT SHOWN ON THIS PAGE AND THE FOLLOWING PAGES TO SIMPLIFY THE DRAWINGS.
STEP 4 - NEOPOR® SEALING JOINTS - VARIOUS OPTIONS

SEAL BUTT JOINTS; SHIPLAP AND T&G JOINTS MAY BE LEFT UNSEALED WHEN DESIGN SHEDS WATER

SEALANT TAPE APPROVED BY BASF CANADA

WEATHER RESISTIVE BARRIER (WRB)
STEP 5 - STRAPPING INSTALLATION

NOTE:
FOR SHEATHING AND STAPPING FASTENERS AND SPACING, REFER TO THE BASF HP+™ TECHNICAL INSTALLATION MANUAL AND THE DJJ ENGINEERING TECHNICAL EVALUATION REPORT.
STEP 6 - RAISE WALL ASSEMBLY IN PLACE
2" x 6" BOTTOM PLATE

- 1" x 3" STRAPPING
- NEOPOR®
  GRAPHITE - ENHANCED
  EXPANDED POLYSTYRENE
- 1/2" PLYWOOD SHEATHING
- HORIZONTAL WOOD GIRTS:
  2" x 4" STUDS
- 1/2" PLYWOOD STRIPS

1" x 3" STRAPPING
- 1/2" PLYWOOD SHEATHING
- HORIZONTAL WOOD GIRTS:
  2" x 4" STUDS

2" x 4"

SILL PLATE GASKET

MASTERSEAL® NP1™ SEALANT
OR 1/2" OR 1" FOAM
SEALANT TAPE

MASTERSEAL® NP1™ SEALANT
OR 1/2" OR 1" FOAM
SEALANT TAPE

1/2" PLYWOOD STRIPS
1/2" PLYWOOD SHEATHING

3D VIEW

SECTION

A

B

3D VIEW

SECTION
STEP 7A - WALL FRAMING WITH OPENING

SECOND WALL FRAMING AND ASSEMBLY
APPLY MASTERSEAL® NP1™ SEALANT AT ALL CORNERS OF OPENINGS

LEGEND

MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE

A

B

MASTERSEAL® NP1™ SEALANT AT ALL CORNERS OF OPENINGS
STEP 7B - LINTEL DETAILS

ALL REFERENCE TO MASTERSEAL® NP1™ OR 1/2" OR 1" FOAM SEALANT TAPE FOR THE LINTEL IS FOR BEST PRACTICE TO IMPROVE AIR TIGHTNESS

LEGEND

- MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE

A SECTION

B SECTION

C 3D VIEW

2" x 4" EDGE PROFILE

MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE (TOP AND BOTTOM)

WINDOW ROUGH FRAME (2" x 6")

2" x 6" BOTTOM PLATE

INTERIOR

EXTERIOR

INTERIOR

EXTERIOR

HP+™ WALL SYSTEM XR-S SERIES FIELD ASSEMBLY GUIDE
STEP 8A - PLYWOOD WALL SHEATHING INSTALLATION

INSTALL PLYWOOD SHEATHING

NOTE:
FOR SHEATHING FASTENERS AND SPACING
REFER TO THE BASF HP+™ TECHNICAL INSTALLATION MANUAL
AND THE DrJ ENGINEERING TECHNICAL EVALUATION REPORT.
NOTE:
FOR SHEATHING FASTENERS AND SPACING
REFER TO THE BASF HP⁺™ TECHNICAL INSTALLATION MANUAL
AND THE D/I ENGINEERING TECHNICAL
EVALUATION REPORT.
A - ENSURE THAT MASTERSEAL® NP1™ SEALANT HAS BEEN APPLIED IN ALL CORNERS OF OPENINGS

B - INSTALL AIR BARRIER AND WATERPROOFING MEMBRANE AT EACH CORNER, COVERING SEALANT INSTALLED IN STEP 7A

C - STARTING ALONG BOTTOM EDGE, INSTALL MEMBRANE AROUND ENTIRE PERIMETER OF OPENINGS
**STEP 9A - AIR / WATER TIGHTNESS OF OPENINGS**

**A**
- FLASHING

**B**
- MASTERSEAL® NP1™ SEALANT

**D** - FOLD MEMBRANE INTO OPENING

**E** - INSTALL MEMBRANE ALONG VERTICAL EDGES OF OPENINGS

**F** - WHEN REQUIRED BY MANUFACTURER USE ROLLER TO APPLY PRESSURE AND SEAL MEMBRANE TO SUBSTRATE

**G** - INSTALL THE WINDOW HEAD FLASHING

**HP+™ WALL SYSTEM XR-S SERIES FIELD ASSEMBLY GUIDE**
**STEP 9B - AIR / WATER TIGHTNESS OF OPENINGS - WEATHER-RESISTIVE BARRIER OPTION**

EXECUTE STEPS "A TO G" AND CONTINUE WITH THE FOLLOWING STEPS WHEN USING A WEATHER-RESISTIVE BARRIER

- WEATHER-RESISTIVE BARRIER OPTION

**H - INSTALL THE WEATHER-RESISTIVE BARRIER**

**I - INSTALL A SELF-ADHESIVE TAPE ALONG THE EDGES OF THE WEATHER-RESISTIVE BARRIER**
STEP 9C - AIR / WATER TIGHTNESS OF OPENINGS - WEATHER-RESISTIVE BARRIER + LIQUID MEMBRANE OPTION

A - INSTALL THE WEATHER-RESISTIVE BARRIER AND FOLD THE EDGES AT THE FOUR SIDES OF THE OPENING


C - EXTEND THE HP+™ FLASH LIQUID FLASHING MEMBRANE USING A TROWEL

STEP 9C - AIR / WATER TIGHTNESS OF OPENINGS - WEATHER-RESISTIVE BARRIER + LIQUID MEMBRANE OPTION

E - EXTEND THE HP+™ FLASH LIQUID FLASHING MEMBRANE USING A TROWEL

F - INSTALL THE WINDOW HEAD FLASHING

G - APPLY MASTERSEAL® NP1™ SEALANT ON TOP OF THE WINDOW HEAD FLASHING
**STEP 10 - WALL AND OPENING DETAILS**

**SECTION A**
- **WEATHER-RESISTIVE BARRIER**
- **MASTERSEAL® NP1™ SEALANT**
- **SELF-ADHESIVE TAPE**
- **BEVELED SILL**
- **SLOPE**
- **OPENING**
- **MEMBRANE**
- **FLASHING**

**SECTION B**
- **WEATHER-RESISTIVE BARRIER OPTION**
- **MASTERSEAL® NP1™ SEALANT**
- **SELF-ADHESIVE TAPE**
- **BEVELED SILL**
- **SLOPE**
- **MEMBRANE**
- **FLASHING**
- **WEATHER-RESISTIVE BARRIER**
- **NP1 SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE**
- **HP™ FLASH LIQUID FLASHING MEMBRANE**

**SECTION C**
- **WEATHER-RESISTIVE BARRIER + LIQUID MEMBRANE OPTION**
- **MASTERSEAL® NP1™ SEALANT**
- **SELF-ADHESIVE TAPE**
- **BEVELED SILL**
- **SLOPE**
- **MEMBRANE**
- **FLASHING**
- **WEATHER-RESISTIVE BARRIER**
- **NP1 SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE**
- **HP™ FLASH LIQUID FLASHING MEMBRANE**

**PLAN SECTION**
- **2" x 6" BOTTOM PLATE**
- **2" x 4" HORIZONTAL WOOD GIRTS: 2" x 4" STUDS WITH 1/2" PLYWOOD STRIPS (ABOVE)**
- **MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE**
STEP 11 - STRAPPING INSTALLATION AROUND WINDOWS

(SEE STEP #5)

NOTE:
FOR SHEATHING AND STRAPPING FASTENERS AND SPACING, REFER TO THE BASF HP+™ TECHNICAL INSTALLATION MANUAL AND THE DrJ ENGINEERING TECHNICAL EVALUATION REPORT. FURRING STRIPS IS BEST PRACTICE.

SECURE STRAPPING TO WINDOW OPENING AFTER DRIP FLASHING INSTALLATION

16" OR 24" O.C./C
STEP 12 - RAISE WALL ASSEMBLY

APPLY A FILL PIECE OF PLYWOOD AND NEOPOR® TO CLOSE THE CORNER

SECURE STRAPPING TO WINDOW OPENING AFTER DRIP FLASHING INSTALLATION

ATTACH TOP PLATE
STEP 13 - CORNER VIEW OF INSTALLED WALLS

MATERIALS:
- MASTERSEAL® NP1™
- Foam Sealant Tape

INSTALLATION:
- Apply Foam Sealant Tape around the window frame.
- Apply MASTERSEAL® NP1™ sealant around the perimeter of the window and any gap between the window and the wall.
STEP 14 - CORNER STRAPPING INSTALLATION

A SECTION

2" x 6" BOTTOM PLATE
2" x 4"
1" x 3" STRAPPING
2" x 6" STUD FOR CORNER
1" x 6" BOARD
1" x 6" BOARD
1" x 4" STRAPPING
1" x 4" STRAPPING
1" x 3" STRAPPING
1" x 6" BOARD

HORIZONTAL WOOD GIRTS:
2" x 4" STUDS
1/2" PLYWOOD STRIPS

MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE

2" x 6"
2" x 4"
2" x 6" BOTTOM PLATE

NEOPOR® GRAPHITE - ENHANCED EXPANDED POLYSTYRENE

SEALANT TAPE APPROVED BY BASF CANADA

HP+™ WALL SYSTEM XR-S SERIES FIELD ASSEMBLY GUIDE

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STEP 15 - SECOND FLOOR ASSEMBLY

ENSURE SEAL OF ALL FLOOR FRAMING COMPONENTS USING
MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE

SEALANT TAPE
APPROVED BY
BASF CANADA

(2019-10-16)
STEP 16A - BUILD AND POSITION SECOND FLOOR WALLS

(SEE STEPS 2 TO 14)
SECTION

3D VIEW

SEALANT TAPE
APPROVED BY
BASF CANADA
STEP 18A - WINDOWS AND DOORS INSTALLATION

WINDOW INSTALLATION ACCORDING TO CSA A440.4

A 3D VIEW

B SECTION

LOW EXPANSION FOAM SEALANT

MASTERSEAL® NP1™

BACKER ROD

SELF-ADHERING MEMBRANE

HP+™ WALL SYSTEM XR-S SERIES FIELD ASSEMBLY GUIDE
WINDOW INSTALLATION ACCORDING TO CSA A440.4

LOW EXPANSION FOAM SEALANT

MASTERSEAL® NP1™

BACKER ROD

HP+™ FLASH LIQUID FLASHING MEMBRANE

WEATHER RESISTIVE BARRIER

HP+™ WALL SYSTEM XR-S SERIES FIELD ASSEMBLY GUIDE

A 3D VIEW

B SECTION
**STEP 19A - INTERIOR INSULATION CORNER DETAILS**

WALLTITE® MUST BE INSTALLED, IN ACCORDANCE WITH BASF'S QUALITY ASSURANCE PROGRAM.

WALLTITE® IS INSTALLED BEFORE OR AFTER ELECTRICAL WIRING AND PLUMBING TASKS

NOTE: REFER TO THE BASF HP+™ TECHNICAL INSTALLATION MANUAL AND THE DrJ ENGINEERING TECHNICAL EVALUATION REPORT
STEP 19B - INTERIOR INSULATION: FIRST FLOOR WALLS AND HEADERS

3D VIEW

MASTERSEAL® NP1™
SEALANT OR 1/2" OR 1"
FOAM SEALANT TAPE

SECTION

MASTERSEAL® NP1™
SEALANT OR 1/2" OR 1"
FOAM SEALANT TAPE
STEP 19C - INTERIOR INSULATION: SECOND FLOOR WALLS AND HEADERS

A 3D VIEW

B SECTION

MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE

SEALANT TAPE APPROVED BY BASF CANADA

MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE

HP+™ WALL SYSTEM XR-S SERIES FIELD ASSEMBLY GUIDE
VARIOUS DETAILS: 1- KNEE WALL

3D VIEW

A

SECTION

B

MASTERSEAL® NP1™
SEALANT OR 1/2" OR 1"
FOAM SEALANT TAPE

SEALANT TAPE APPROVED
BY BASF CANADA

MASTERSEAL® NP1™
SEALANT OR 1/2" OR 1"
FOAM SEALANT TAPE
VARIOUS DETAILS:
2- CANTILEVERED FLOOR

3D VIEW

A

SECTION

B

MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1"
FOAM SEALANT TAPE

HP+™ WALL SYSTEM XR-S SERIES FIELD ASSEMBLY GUIDE
VARIOUS DETAILS:
3- CANTILEVERED FLOOR ON BEAM

A
SECTION

INTERIOR

EXTERIOR

SELF-ADHERING MEMBRANE

MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE

3D VIEW

HP+™ WALL SYSTEM XR-S SERIES FIELD ASSEMBLY GUIDE
**VARIOUS DETAILS:**

**4- UNHEATED GARAGE ELECTRICAL OUTLET**

**NOTE:**
All exposed foam plastic insulation must be covered with a thermal barrier approved by code.

---

**OUTDOOR ELECTRICAL OUTLET**

**A**

**SECTION**

**B**

**SECTION**

**MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE**

**MASTERSEAL® NP1™ SEALANT OR 1/2" OR 1" FOAM SEALANT TAPE**

**UNHEATED GARAGE**

**HPU+ WALL SYSTEM XR-S SERIES FIELD ASSEMBLY GUIDE**

**BASF**
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A 3D VIEW

B SECTION

3D VIEW

PLYWOOD AND NEOPOR® UP TO THE SOFFIT

VAPOUR BARRIER

MASTERSEAL® NP1™ SEALANT OR 1/2” OR 1” FOAM SEALANT TAPE

*AS REQUIRED BY CODE
**IMPORTANT:**
ADVANCE PLANNING IS SUGGESTED TO FACILITATE THE CONSTRUCTION OF WALL CORNERS AND JUNCTIONS, AS WELL AS THE SEQUENCE OF WALL ASSEMBLY AND ERECTION.

**VARIOUS DETAILS: 6- INSTALLATION SEQUENCE**

1. **ROUGH FRAME**
2. **INTERIOR**
3. **DOOR**
   - SEALANT TAPE APPROVED BY BASF CANADA
   - SEALANT TAPE APPROVED BY BASF CANADA

**PLAN SECTION**