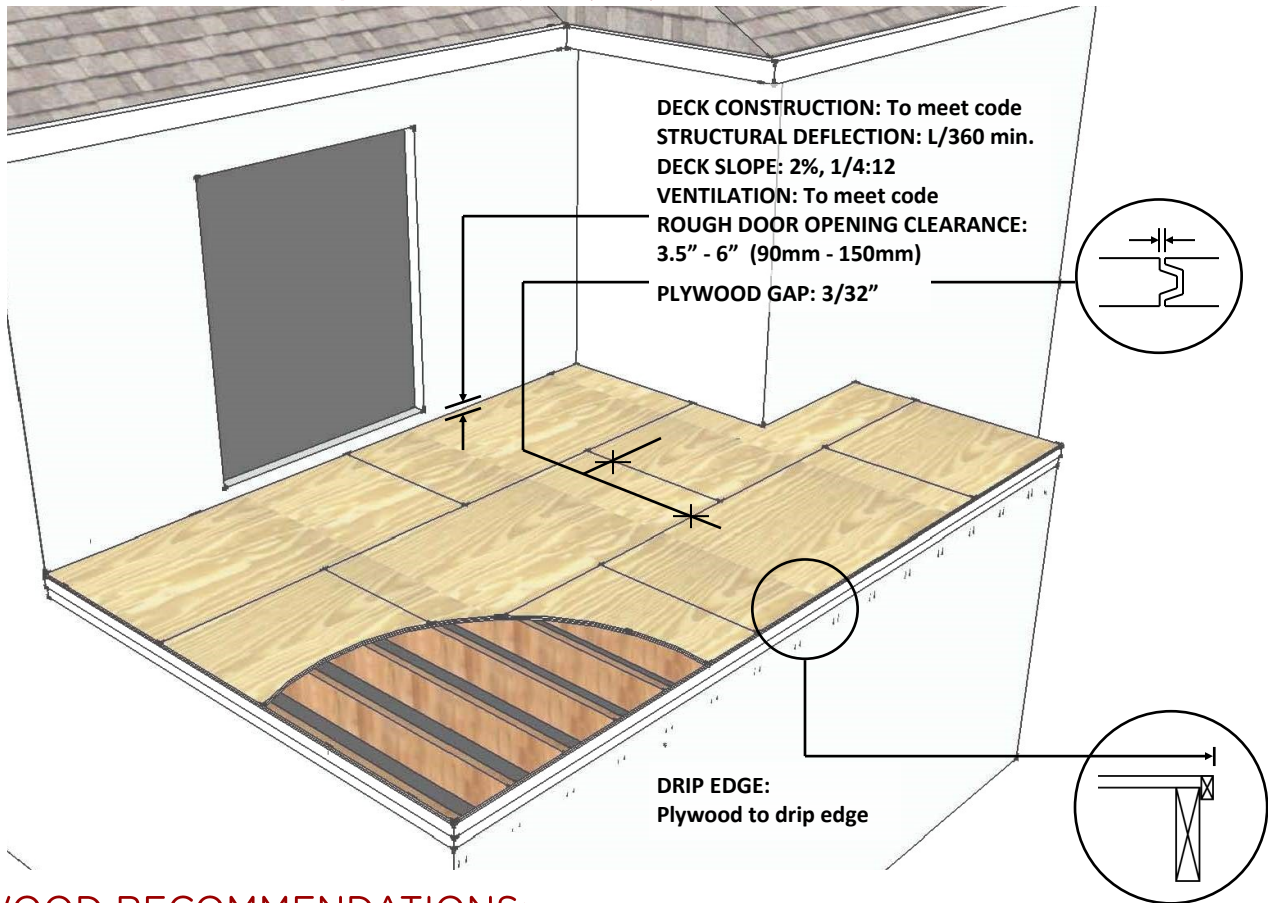


## PLYWOOD SHEATHING & DECK CONSTRUCTION RECOMMENDATIONS

Please share this information with all parties involved in building the deck, or preparation of the substrate.



### PLYWOOD RECOMMENDATIONS:

CANADA:

Trademark Stamp - APA (The Engineered Wood Association)

Standards - Douglas Fir (FIR) CSA O121 - DFP & Canadian Softwood (SPF) CSA O151-CSP

Property	Recommended	Acceptable
Thickness	23/32" (18.5mm) over joists @ 16" (400mm) o.c.	19/32" (15.5mm) over joists @ 16" (400mm) o.c.
Grade	T&G—Floor, select tight face (SEL TF) B - C Grade	T&G—C-C Underlayment Plugged
Group / Species	Douglas Fir (Fir)	Canadian Softwood (SPF)
Exposure Durability	Exterior	Exterior

**Fasteners:** Recommend #10 exterior wood deck screw either stainless steel or coated with non-staining finish or hot dipped galvanized ring thread or spiral nails. Nails should be driven in at a slight angle to reduce nail pops. Fasteners to be of sufficient length to penetrate deck framing members 1" (25mm) min. 1.25" (31.75mm) max. Slightly recess all fastener heads.

**Fastener Spacing:** Space fasteners 6" (150mm) o.c. along edges and 8" (200mm) o.c. along intermediate supports.

## UNACCEPTABLE SUBSTRATES

Poplar plywood, orientated strand board (OSB), particle board, luaun, panels with medium density overlay (MDO) or high density overlay (HDO), treated plywood (ie: fire treated, pressure treated or panels with field and/or edge sealants) either factory or field applied are not recommended.

Adhesives used to secure plywood patches, predominantly in Grade 'A' panels, are known to stain pvc membranes. Seal all wood patches with two coats of Zinnser Bin Shellac Based Primer Sealer.

*Issues arising from improper substrates, improper slope, substrate movement or deflection, etc. are specifically excluded from the Duradek warranty. Please refer to the written warranty for further information. The manufacturer or supplier of products (not supplied by Duradek) are responsible for assuring the compatibility and correctness for their use with Duradek PVC Membranes.*

General Note: Duradek does not supply framing & sheathing products. Always refer to manufacturer's written instructions & the requirements of authority having jurisdiction before building or altering a deck.

## DECK DESIGN AND CONSTRUCTION

**Structural Design:** to governing building code requirements.

**Framing Lumber:** Install Kiln-dried lumber with crown sides up.

**Deflection:** minimum allowable deflection of L/360;

**Joist Spacing:** 16" (400 mm) o.c. recommended.

**Slope:** 1/4" per foot (2%) positive slope is required to prevent standing water.

**Door Openings:** Recommend rough door openings to be 3.5" to 6" (90mm to 150mm) above elevation of finished deck. Lower rough openings, as required for handicapped accessible doors (see Duradek detail IS-04), are acceptable. For a comprehensive waterproofing system, the membrane is to be applied into the rough door opening.

**Ventilation:** of roof joist space or unconditioned areas like crawl spaces to meet governing building code requirements. Adequate ventilation should be provided to the underside of a sundeck when built close to finished grade.

**Drains:** place drain(s) at points of maximum deflection, not over columns, beams etc. Any required overflows should be placed in close proximity to the drain(s) and located no more than 2" (50 mm) above the deck surface or lower than any building opening.

## PLYWOOD INSTALLATION

**Delivery/storage/handling:** Avoid damaging plywood panels especially edge surfaces when handling. Store panels in a sheltered place, stacked, separated & with no direct contact with the ground.

**Moisture Content:** Ideal moisture content of plywood is 12-14% @ 70% relative humidity / 68 deg. F (20 deg. C). To achieve desired MC for new plywood, store panels for 7 days (minimum of 48 hours) as noted above.

**Placement:** Plywood panels to be installed with the surface grain at right angles to the joists. Install first row of plywood at building side with the "tongue" facing the building. Remove the tongue for tight fit. End joints shall be supported over 2" wood joists. At unsupported joints, install 2" x 4" blocking securely nailed between framing members. Nail or screw plywood in place. Stagger end joints in each succeeding row. Center panels over load bearing beams, walls etc to reduce ridging. Panels to span 3 joists min. At outside drip edge extend plywood to finished line of deck including trims, fascia boards, etc.

**Gap:** 3/32" (2.38 mm) @ side & end joints of panels.

**Fasteners:** Recommend #10 exterior wood deck screw either stainless steel or coated with non-staining finish or hot dipped galvanized ring thread or spiral nails. Nails should be driven in at a slight angle to reduce nail pops. Fasteners to be of sufficient length to penetrate deck framing members 1" (25 mm) min. 1.25" (31.75 mm) max. Slightly recess all fastener heads.

**Fastener Spacing:** Space fasteners 6" (150mm) o.c. along edges & 8" (200mm) o.c. along intermediate supports.

**Panel Adhesive:** Do not apply panel adhesive at any plywood joints or between the panels of a two layer system.

## OTHER SUBSTRATE REQUIREMENTS

### Two Layer Subfloor

Two-layer subfloor system is recommended when covering an existing panel that is not a suitable substrate or to achieve a Class “A” rated roof assembly. Do not apply new top layer panel over an existing waterproofed/sealed base layer. Existing membrane/sealer must be removed and a new substrate provided.

Recommended Top Layer Overlay	Acceptable Top Layer Overlay
<sup>23</sup> / <sub>32</sub> " (18.5mm) T&G plywood: refer to "Recommended" plywood specifications	<sup>19</sup> / <sub>32</sub> " (15.5mm) T&G plywood: refer to "Acceptable" plywood specifications
Cement board: min. <sup>1</sup> / <sub>2</sub> " (12.5 mm) installed per manufacturer's specifications <i>This will achieve Class 'A' fire rating substrate requirements Duradek's ICC-ES Report (ESR-2151)</i>	<sup>1</sup> / <sub>2</sub> " (12.5 mm) Exterior grade square edged plywood

**Two Layer Subfloor Installation:** Base layer to be installed as per single layer subfloor instructions as noted above. Top layer overlay to be installed parallel to base layer but offset 1/2 panel in both directions. Fasteners, types as noted above, to be of sufficient length to penetrate deck framing members 1" (25mm) min. 1.25" (31.75mm) max.

**Wall/Parapet/Curb Sheathing requirements:** Duradek membranes to be bonded to a suitable substrate at all vertical applications & at perimeter details. Membrane can be bonded to un-treated dimensional lumber at rough door sill or at curb if the membrane is to be later covered with metal flashing or wood trim.

Acceptable Wall/Parapet/Curb Sheathing
<sup>1</sup> / <sub>2</sub> " (12.5mm) plywood: refer to "Acceptable" plywood specifications

## PLYWOOD SURFACE PREPARATIONS

- Sand all plywood joints and rows of fasteners with a floor edger or belt sander.
- Install any necessary flashing trim being sure that they will not impede the flow of water (recessing drip edge using a planer is best practice).
- Spot fill all knotholes, depressions (including nail and screw holes where necessary), damaged areas and at flashing trims with either approved floor patch.
- Fill plywood joints as needed.
  - If plywood moisture content is less than 12%: do not fill any gaps.
  - If plywood moisture content is 12% or higher: do not fill gaps 1/16" or less. Double fill gaps 3/32" or more.
  - Membrane may settle into gaps larger than 3/32" which could show under some lighting conditions.
- Sand all areas that leveler was applied once it has dried.
- Synthetic patches must be removed & filled with floor patch or painted with 2 coats of Zinsser Bin Shellac Based Primer Sealer (application should be conducted at surface temperatures at or below 90 degrees F - [see manufacturer recommendations](#)). Wood veneer patches, pitch pockets, pitch streaks, red chalk, ink, construction adhesive, wood filler, etc. must also be sealed with 2 coats of Zinsser Bin Shellac Based Primer Sealer. Darker colored knots are to be filled with floor patch and painted with 2 coats of Zinsser Bin Shellac Based Primer Sealer.
- Use a whiskbroom or powered blower to clean off all debris. Do a final inspection to ensure the deck is suitable for the application of the Duradek membrane. The deck is accepted as being suitable once the membrane installation commences.
- Installed Spruce-Pine-Fir (SPF) panels should be waterproofed immediately as they are more prone to face checking when left exposed to the elements. Protect plywood from rain & snow after installation to prevent moisture pickup. Do not place tarps directly on wood. Use sleepers under tarps to allow for air movement.

*Duradek installers proceed with the expectation that all elements of the building/deck are constructed to meet the building code and that if you choose another contractor to prepare the substrate, it complies to our substrate recommendations.*