HEAT RISK ASSESSMENT

1. PURPOSE (What WorkSafeBC Requires)

- Employers must **assess heat stress risk before and during work**
- Must consider **environment + work + worker factors** [worksafebc.com], [worksafebc.com]
- If risk exists → implement **Exposure Control Plan (ECP)**

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2. STEP-BY-STEP ROOFING HEAT RISK ASSESSMENT

STEP 1 – ENVIRONMENTAL CONDITIONS

Measure or obtain:

- ☐ Air temperature
- ☐ Humidity / Humidex
- ☐ Sun exposure (full sun vs shade)
- ☐ Wind / air movement

Roofing has **extreme radiant heat from roof surfaces + sun** [worksafebc.com]

Risk Rating (Field Method)

Factor	Low	Moderate	High	Extreme
Temp (°C)	<25	25–30	31–35	>35
Humidex	<30	30–37	38–41	≥42
Sun	Shade	Partial	Full sun	Full + reflective

STEP 2 – WORKLOAD (ROOFING = HEAVY)

Evaluate:

- ☐ Carrying rolls/bundles
- ☐ Torch-on / hot work
- ☐ Shoveling / lifting
- ☐ Sustained exertion

Heavy work significantly increases internal heat load [worksafebc.com]

Risk Level:

- ☐ Light
- ☐ Moderate
- **Heavy (typical roofing) ✓**

STEP 3 – RADIANT HEAT & SURFACES (CRITICAL FOR ROOFING)

Assess:

- ☐ Black/dark membrane
- ☐ Torch-on systems
- ☐ Metal roof reflection
- ☐ Lack of shade

Roofing can exceed air temp by **significant margin due to surface heat** [ehab.co]

Adjustment:

- ☐ +1 risk level (black roof)
- ☐ +2 risk levels (torch-on or reflective heat)

STEP 4 – PPE & FALL PROTECTION FACTORS

Assess:

- ☐ Full fall arrest (harness + lanyard)

- ☐ High-vis clothing
- ☐ Gloves / long sleeves
- ☐ Restricted airflow

PPE reduces heat dissipation and increases strain [heatstress.com]

Adjustment:

- ☐ +1 risk level (standard PPE + harness)
- ☐ +2 if restricted airflow or heavy gear

STEP 5 – EXPOSURE DURATION

- ☐ <1 hr
- ☐ 1–3 hrs
- ☐ 4+ hrs continuous

Longer duration = higher cumulative risk [worksafebc.com]

STEP 6 – WORKER FACTORS

Identify high-risk individuals:

- ☐ New / not acclimatized
- ☐ Returning after time away
- ☐ Medical conditions
- ☐ Dehydrated

Personal factors affect heat tolerance [worksafebc.com]

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3. FINAL RISK RATING (SUPERVISOR METHOD)

Combine all factors:

Start with base (Humidex):

- 30–33 → Moderate

- 34–37 → High
- 38–41 → Very High
- ≥42 → Extreme

Add adjustments:

- +1: heavy work
- +1: PPE/fall protection
- +1 to +2: radiant heat
- +1: unacclimatized workers

Example (Roofing Crew):

- Humidex = 38 → Very High
- Heavy work = +1
- Harness = +1
- Black roof = +1

Final = **Extreme risk**

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4. REQUIRED ACTIONS BY RISK LEVEL

Final Risk Level	Required Controls
Moderate	Hydration + monitoring
High	Add rest breaks + supervision
Very High	Work-rest cycles + shade
Extreme	**Stop work or heavily restrict**

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5. REQUIRED CONTROLS (ROOFING-SPECIFIC)

Engineering

- ☐ Shade structures
- ☐ Reflective barriers

Administrative

- ☐ Work-rest cycles
- ☐ Early start / reschedule
- ☐ Crew rotation

Hydration

- ☐ 250 ml every 15–20 min
- ☐ ~1 L/hr for heavy work

Monitoring

- ☐ Buddy system
- ☐ Supervisor checks

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6. AUTOMATIC HIGH-RISK TRIGGERS

Treat as **HIGH or EXTREME regardless of temp**:

- ☐ Torch-on roofing
- ☐ Black membrane in full sun
- ☐ No shade available
- ☐ Workers in full fall arrest all shift

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7. STOP WORK CRITERIA

- ☐ Workers showing symptoms
- ☐ No cooling or water available
- ☐ Humidex ≥ 45
- ☐ Controls ineffective

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8. DOCUMENTATION (FOR COMPLIANCE)

- ☐ Daily heat assessment completed
- ☐ Conditions recorded
- ☐ Controls documented
- ☐ Supervisor sign-off

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9. QUICK SUPERVISOR CHECK (FIELD VERSION)

- ☐ What's the Humidex?
- ☐ Are workers in sun + black roof?
- ☐ Are they wearing harness?
- ☐ Are breaks enforced?
- ☐ Is water within reach?

If unsure → **treat as higher risk**

Bottom Line (Roofing Reality)

- Roofing = **highest heat risk trade**
- Risk comes from:
    - heavy work
    - direct sun
    - radiant heat
    - PPE

You must **layer adjustments** — not rely on temperature alone