Commentary-Dave Pasolli-WWTA

What is an EPD and do we need one?

An Environmental Product Declaration, or EPD, is a document which transparently communicates the environmental performance or impact of any product or material over its lifetime.

Stakeholders within the building design and construction community are increasingly being asked to include information in their decision-making processes that take into consideration potential environmental impacts. These stakeholders and interested parties expect unbiased product information that is consistent with current best practices and based on objective scientific analysis. In the future, building product purchasing decisions will likely require the type of environmental information provided by environmental product declarations (EPDs). In addition, green building rating systems, including LEED®, Green Globes™ and BREEAM®, recognize the value of EPDs for the assessment of potential environmental impacts of building products.

EPDs are concise, standardized, and third-party verified reports that describe the environmental performance of a product or a service. EPDs are able to identify and quantify the potential environmental impacts of a product or service throughout the various stages of its life cycle (resource extraction or harvest, processing, manufacturing, transportation, use, and end-of-life). EPDs, also known as Type III environmental product declarations, provide quantified environmental data using predetermined parameters that are based on internationally standardized approaches. EPDs for building products can help architects, designers, specifiers, and other purchasers better understand a product's potential environmental impacts and sustainability attributes.

I would expect at the very least any building that has anything to do with government funding will require an EPD.

An EPD is a disclosure by a company or industry to make public the environmental data related to one or more of its products. EPDs are intended to help purchasers better understand a product's environmental attributes in order for specifiers to make more informed decisions selecting products. The function of EPDs are somewhat analogous to nutrition labels on food packaging; their purpose is to clearly communicate, to the user, environmental data about products in a standardized format.

EPDs are information carriers that are intended to be a simple and user-friendly mechanism to disclose potential environmental impact information about a product within the marketplace. EPDs do not rank products or compare products to baselines or

benchmarks. An EPD does not indicate whether or not certain environmental performance criteria have been met and does not address social and economic impacts of construction products.

Data reported in an EPD is collected using life cycle assessment (LCA), an internationally standardized scientific methodology. LCAs involve compiling an inventory of relevant energy and material inputs and environmental releases, and evaluating their potential impacts. It is also possible for EPDs to convey additional environmental information about a product that is outside the scope of LCA.

EPDs are primarily intended for business-to-business communication, although they can also be used for business-to-consumer communication. EPDs are developed based on the results of a life cycle assessment (LCA) study and must be compliant with the relevant product category rules (PCR), which are developed by a registered program operator. The PCR establishes the specific rules, requirements and guidelines for conducting an LCA and developing an EPD for one or more product categories.

Third-party verification is a key factor in why EPDs are valued for their impartial, standardized and comparable information. It is a core element of the international standard which defines EPDs, ISO 14025. Without third-party verification, your EPD will not be recognized by many certification schemes, regulations and procurement requirements.

As the demand for EPD grows, there has been an accompanying rise in companies offering labels which are called EPDs, but without third-party verification. Buyer beware. Bypassing this step may seem attractive in the short-term, but in the long run, could render your EPD investment effectively useless.

For the most part those of us in our industry believe and claim that using wood is good for the environment, but so do all the competitive construction materials like steel and concrete. Everyone has an environmental slant to their sales pitch.

Creating EPDs are going to be an important requirement to support the use of wood trusses for specifiers and building owners going forward, and I don’t think we want to be caught flat footed when they start to ask for them.

Put simply, having EPD certification means Alberta truss plants will provide credible environmental performance data for your wide range of products.

How do we get an EPD?

The Canadian Wood Council (CWC) is going to give us some assistance in creating EPDs for our industry, but they need your help.

One thing that jumps out at me is that an EPD can be different depending on where you are located because it takes into account the source of energy to produce the product. So a truss plant in BC that has generated from hydro may have a different EPD than one in Alberta where energy is primarily produced through natural gas for instance.

So in order for the CWC to help us we need to help them through the collection of data. This includes information on raw material, waste, efficiency etc. Where the information came from specifically will remain confidential so that no other company will know your inputs or outputs.

They will then turn this data over to a third party to do a life cycle assessment and develop an EPD for wood trusses in Alberta.

This will save individual companies from having to compile their own EPDs.

Over the next weeks and months Alberta truss companies will be contacted to complete a survey from the Peter Moonen-National Sustainability Manager with the CWC in order to collect information on our processes.

In order for this project to be a success it has to start with good data and I would encourage those of you contacted to take the time to provide information so that the project can move forward and we not only comply with providing EPDs going forward, but scientifically compare our products with other competitive structural systems.

You may not be able to answer all the questions because they may not relate to your company specifically, but the better the input the better the output.

This is really a pretty good deal for us because all you are providing is information as opposed to going out and having to hire an EPD developer to do the work for your individual company or trying to do it yourself.

This is one of the benefits of your membership in the Canadian Wood Truss Association and their support of the Canadian Wood Council.

If you have an idea for a commentary or would like to submit your own commentary for a future newsletter please let me know at dave@wwta.ab.ca

Economic Update

June Housing Starts

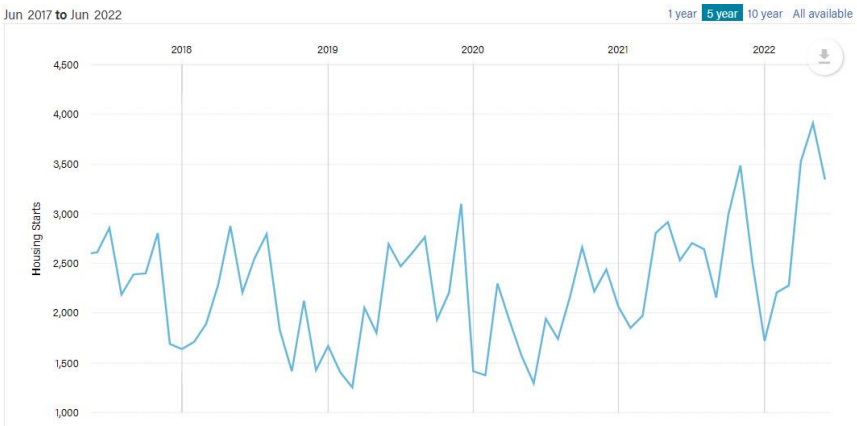
In Alberta, urban housing starts totaled 3,345 in June 2022, a year-over-year increase of 32.3%. Canadian housing starts decreased by 7.1% over the same period. In Alberta, single-detached units, which comprised 46.6% of all units, increased by 25.7%, while apartment units, which comprised 35.5% of all units, increased by 70.9%.

Calgary starts were up slightly from 1769 in May, while Edmonton starts down from 1771 units last month.

Housing Starts Alberta						
	Jun-22	Jun-21	% Change	YTD 2022	YTD 2021	% Change
Alberta	3345	2528	32.32%	17002	14141	20.23%
Edmonton	1107	1055	4.93%	7186	5855	22.73%
Calgary	1883	1173	60.53%	8125	6875	18.18%
Red Deer	28	42	-33.33%	76	119	-36.13%
Grande Prairie	31	11	181.82%	104	69	50.72%
Lethbridge	39	42	-7.14%	429	345	24.35%
Wood Buffalo	14	10	40.00%	64	41	56.10%
Canada	23612	23573	0.17%	112455	120938	-7.01%

Buoyed by resurgent oil and gas sector and the return of positive population gains from interprovincial migration, seasonally adjusted housing starts in the province came in at an annual rate of 39,429 units in June. Although 16% lower than the month before, the construction of new homes in Alberta in June remained 38% higher than the five-year average.

At an annual rate of about 36,000 units, housing starts in Alberta over the first half of the year were the highest since 2015.



Housing starts by month 2017-2022

Inflation and higher borrowing costs will weigh on housing demand and, in turn, on new home construction. At the same time, tight supply and relatively robust population growth will likely keep housing starts in Alberta above the five-year average in both 2022 and 2023.

Inflation jumped in June

The numbers for June are in and, once again, they ain't pretty.

The national inflation rate hit 8.1% and is likely to stay at or near this level for several more months.

At 8.4%, inflation in Alberta was running above the national average.

Looking ahead, the hope is that recent (and forthcoming) interest rate hikes will start to bring down inflation.

The road back to normal is, however, a long one.

According to the Bank of Canada's July outlook, the national inflation rate won't dip back down to about 3% until the end of 2023 and it won't hit the Bank's 2% target until the end of 2024.

On top of the slow pace at which inflation is expected to cool, there is growing concern that it will become "entrenched" and turn into a psychological problem that is harder to address.

In a nutshell, if consumers, businesses and workers *expect* inflation to remain high, this will induce a vicious circle of wage and price increases that will require even higher interest rates and even slower economic growth (if not outright recession) to counter.

This is why it is important to take a long-term view of the current situation: it will take time for interest rate increases to have the desired effect. This is not easy for households with strained budgets or for workers who are watching the purchasing power of their pay erode, but it might help us avoid an even bumpier road ahead.

trudeau fiddles while economy burns

trudeau no solid plan to tackle inflation

Alberta expected to grow by two million by 2046

The Government of Alberta has released a new set of population projections* that estimate the total population of the province will rise to over 6.4 million by 2046.

Relative to 2021, this represents a gain of almost two million residents and an average annual growth rate of 1.5% between 2022 and 2046.

Large urban areas within the province are positioned favourably for faster population growth with about 80% of residents projected to be living in the Edmonton-Calgary corridor by 2046.

Over this same period, the average age of an Albertan will go from 39.0 to 41.7 with one in five Albertans 65 or older by 2046.

In addition, the province will become even more diverse with international migrants accounting for the majority (55%) of the aggregate population increase.

With a healthy economic climate, Alberta is also expected to attract an average of 12,900 migrants per year (on a net basis) from other provinces and territories.

Lumber

Chicago lumber futures were trading around the $600-per-thousand-board-feet mark, a level not seen in over a month, as the US housing market shows signs of slowing down amid sky-high mortgage rates. Sales of previously owned homes in the US declined for a fifth consecutive month in June, as fast-rising interest rates and record-high selling prices continued to take a toll on potential buyers. At the same time, housing starts have dropped 2% month-over-month to an annualized rate of 1.559 million units in June, the lowest since September last year. On top of that, sawmills choose to take seasonal and maintenance curtailments during this time of the year as most of the large US home builders have already made their purchases for planned autumn construction projects.

Quality Control

Floor Trusses

I have had several inquiries lately about the quality requirements for 4X2 floor trusses and the differences compared to roof trusses.

The major difference in Appendix G of TPIC 2019 is around the tolerances for plate placement.

G.4.2 Plate placement tolerances

G.4.2.1 General

G.4.2.1.1 Lumber on edge (normal trusses)

During the truss manufacturing process, plates shall be positioned according to the Truss Shop Drawing and should be placed within the **6.4 mm (¼")** plate placement translation tolerance and within the plus and minus **five degree (±5˚)** plate rotation tolerance. In no case shall the positioning decrease the number of effective teeth in any member to less than the minimum number required for that member.

G.4.2.1.2 Lumber on flat (4X2 floor trusses)

During the truss manufacturing process, plates shall be positioned according to the Truss Shop Drawing and should be placed within the **3.2 mm (1/8")** plate placement translation tolerance. In no case shall the positioning decrease the number of effective teeth in any member to less than the minimum number required for that member. Due to relative ease of locating plates parallel to and near the edge of lumber, **no allowance for rotational misplacement is required.**

So, when inspecting a 4X2 floor truss the plates must be within 1/8" with no rotation allowed.

Dimensional Tolerance

Although Appendix G in TPIC does not have specific allowable dimension tolerances for floor trusses, because people are walking on them I believe that the tolerances should be less in height, for both on edge and flat. It is very unlikely that a person will notice 1/4" of tolerance in a roof, but very likely that they will notice it in a floor situation.

Floor trusses are competing with manufactured I-Joist and the expectation from the homeowner is that their floor be very flat. That is why plants should strive to have no

more than 1/8” tolerance in the height of a floor truss. During your internal inspection you should measure at both bearings and the center of the floor truss.

Web Alignment

Although floor trusses are much simpler than roof trusses when it comes to the web components, because they are of a uniform height it is important to pay attention to the alignment of the webs, because they can easily be put in the wrong orientation.

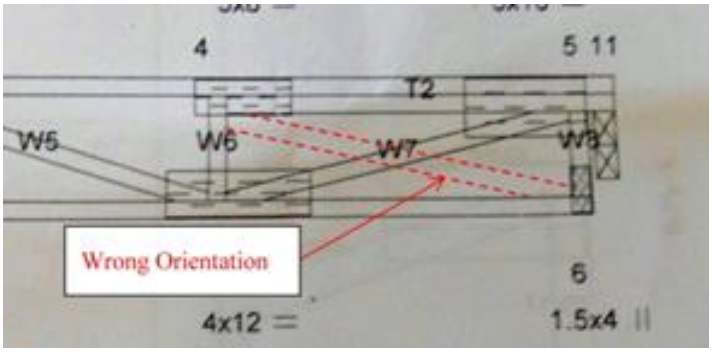
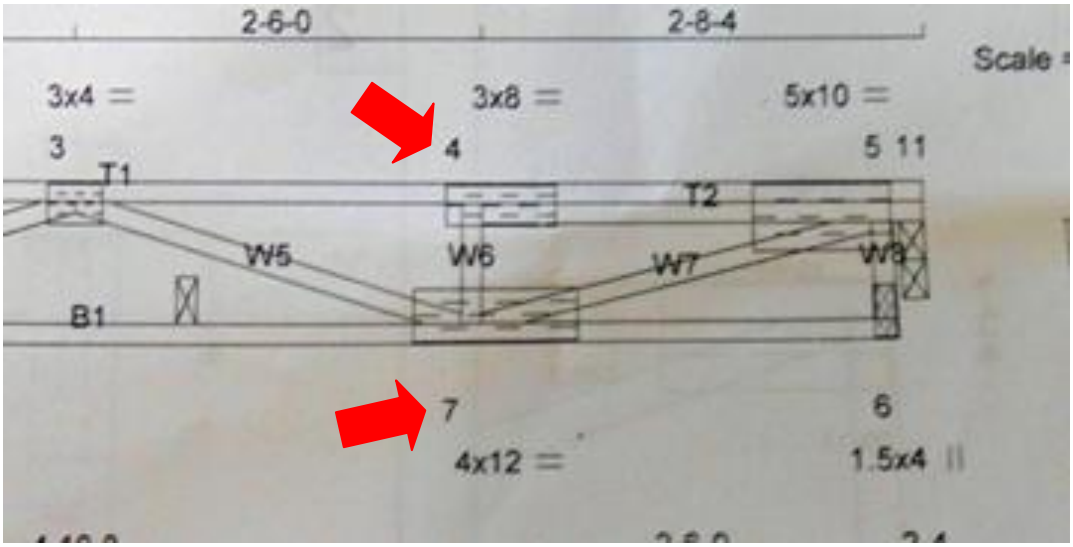
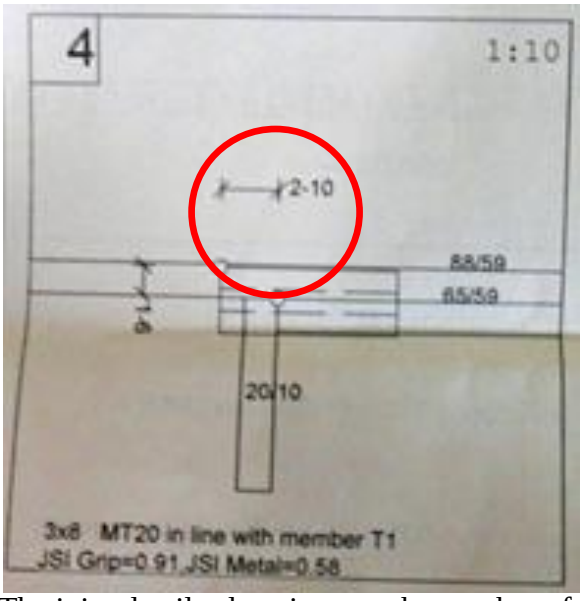


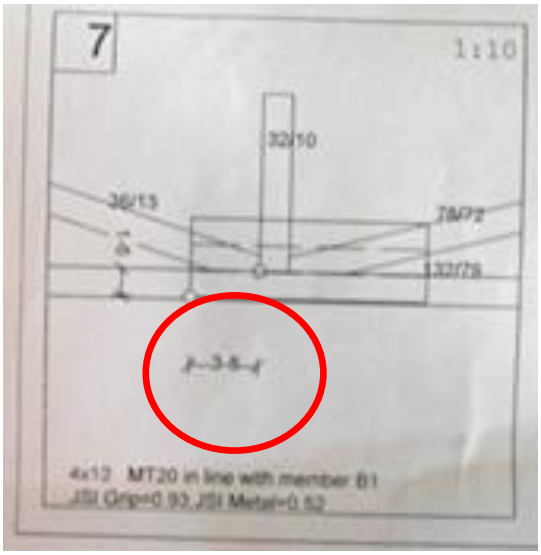
Plate Offsets

Again, because you are dealing with boxes it is especially important that you also pay attention to the offsets for the plates that are not symmetrical and ensure that they are offset in the correct direction.



This is why it is still important to have the joint details to locate the plates.





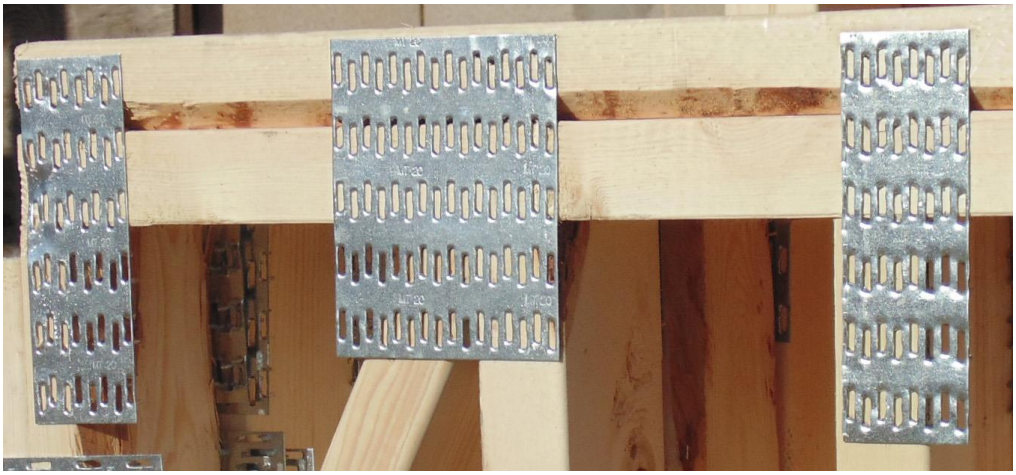
The joint details also give you the number of minimum effective teeth in the case that there is a lumber defect and the plate has to be upsized.

Plates can also not extend beyond the edges of the truss, because when they are pressed the truss plate will deflect reducing the effectiveness of the teeth and possible damaging the chord. (below)

Lumber

Like any truss it is important to pay attention to the lumber defects, but the one to really look out for is wane, especially in the top and bottom chords. Because you are pressing

into the 1 ½” dimension there is very little you can do to upsize the plate to account for ineffective teeth into the wane.

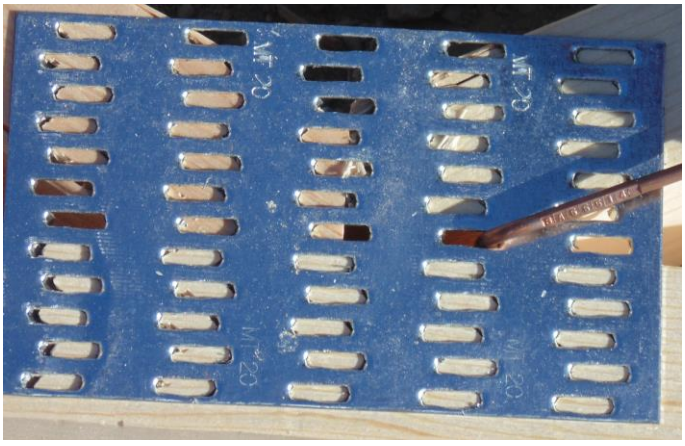


Wane in top chord resulting in ineffective teeth

Limiting the wane in lumber is especially important if you are using a **posi-strut** web system, because there is no allowance for upsizing the plate to account for ineffective teeth.

Joint Gaps

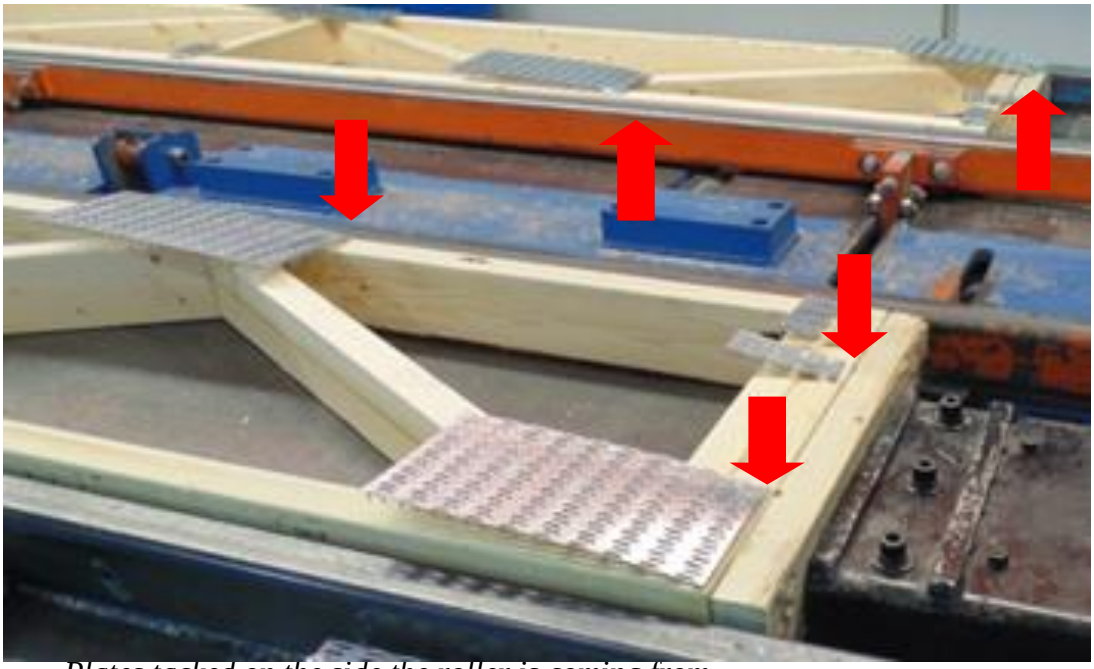
Joint gaps in should be limited to 1/16” due to the fact that when the floor truss is loaded if there is a gap, the load will close the gap resulting in an uneven floor.



Placing Plates

As with roof trusses, it is important that when placing plates they are not over hammered, which will result in bending the teeth making them less effective. So when trusses are

built in a floor truss press the plates should be tacked on the side that the roller is traveling from. (below)



Plates tacked on the side the roller is coming from

Bundling Trusses

It is important that the bundle of trusses be banded at the vertical posts, as banding them in the middle of the panel may cause a deformation that will show up as a dip in the floor. Do not stack trusses more than 6 bundles high.

Proper banding at the post

Improper banding in mid panel

For more information on floor trusses check out www.trusstrainingonline module #406.

Health and Safety Toolbox

Similarly to the Quality topic the WWTA would like to give you a monthly item you can discuss when doing your Safety Toolbox meeting. This month we are going to focus on **Substance Abuse and the Workplace and Dealing with Impairment**

The opioid overdose crisis is disproportionately affecting people working in the trades and construction. Other substances such as alcohol and cannabis are also of concern. To support employers and workers in these sectors, Health Canada has partnered with the Canadian Centre on Substance Use and Addiction (CCSA) to produce a toolkit of resources. It's called *Substance Use and the Workplace: Supporting Employers and Employees in the Trades*

This collection of resources is aimed at helping employers address employee substance use, particularly among young men working in the trades. Employers can find ready-to-use resources from more than 30 organizations to learn how to reduce risks related to substances and substance use disorder, and to support workplace health and safety. The toolkit includes resources to help:

- Educate employees about substances and their effects,
- Prevent substance use harms,
- Address employee substance use,
- Find services and supports, and
- Access related information from key reports and organizations.

For more information on opioids, please visit Health Canada's Opioids web page, and for more information on workplace safety and substance use, please visit CCSA's Workplace Safety web page.

Impairment in the Workplace

Worker impairment, regardless of the cause, could create a work site health and safety hazard.

If impairment creates a hazard or unsafe work situation, employers, supervisors, workers and other worksite parties have an obligation to address it and implement controls under the *Occupational Health and Safety (OHS) Act*.

Employers may encourage workers to disclose known impairment that may affect workplace health and safety without needing to disclose the cause of the impairment. The risk of injury or illness increases when a hazard is not identified or controlled.

Resource: Impairment in the workplace: OHS information for workers and employers

Causes of Impairment

Impairment can be caused by any physical or psychological condition that affects a workers ability to safely perform their assigned work and creates risk to themselves or others.

Causes can include:

- medical conditions – such as seizures or unexplained unconsciousness
- prescription or non-prescription drugs – including cold medication or pain relievers
- recreational cannabis – workplace policies should ensure workers understand their expectations around consumption
- alcohol – poor coordination, slurring words
- fatigue – feeling very tired, weary or sleepy resulting from both mental or physical factors
- mental health concerns – including depression or anxiety
- temporary, situational stressors – such as grief or financial problems

Recognizing Impairment

Impairment can be unique for every situation and for each individual. Many causes cannot be identified by testing.

Supervisors should be educated, trained and understand how to recognize impairment. Workers should be aware of impairment risks in the workplace and disclose known hazards to themselves and others.

Common indicators of impairment include:

- physical – changes in health, altered demeanor, slurred speech or lack of hygiene
- psychosocial – changes in an ability to focus on tasks, forgetfulness, inappropriate behaviors or changes in mood
- workplace – increased absence, errors in judgement, change or decrease in performance or other significant changes in quality of work

Responding to Impairment

Employers

Employers and supervisors should develop clear policies of what is considered impairment in the workplace, how impairment will be investigated and provide training to workers.

Responding to situations of impairment should be done fairly and without judgement.

If there is an observed impairment, employers or supervisors should take steps to address unsafe situations and control the hazard, such as not assigning activities to a worker or not allowing them to continue working.

Contact emergency services immediately if there is a crisis or medical emergency.

Employers can address impairment in the workplace by:

- identifying and assessing hazards
- identifying controls to prevent impairment in the workplace
- developing safe work procedures
- reporting incidents
- investigating and documenting incidents
- supporting workers

Workers

Workers have an obligation to perform their job safely. They must not perform work when there is a risk of impairment that may affect the health and safety of themselves and others.

Workers are expected to cooperate with their employer or supervisor by reporting known impairment that may affect their ability to perform the job safely or the safety at the workplace.

Workers do not have to disclose the cause of impairment.

Testing for Impairment

Current legislation does not address testing for impairment.

Employers who choose to test workers where safety is a concern should seek legal advice on issues of human rights, labour and employment law, privacy, and occupational health and safety before implementing a testing program.

Developing Policies

Supervisors and employers can help promote a culture of safety by creating policies that recognize and respond to impairment in the workplace.

Health and safety committees and representatives can help develop work site policies and procedures for impairment to help create a culture of prevention.

The impairment policy template is a tool to help develop or revise workplace impairment policies.

The Alberta Government has a new format OHS eNews you can subscribe to with all kinds of good material at: https://ohs-pubstore.labour.alberta.ca/

News and Events

A Conversation With….

I was unable to organize a conversation with for the month of June due to some conflicts.

Please join us for a Conversation with Mike Froese from Magnum Forest Products on August 3 at 9:30 am Mountain Time. Mike will be discussing about his views on the current lumber market and will take questions from participates.

Truss Plate Institute of Canada Technical Committee Meeting June 2-3, 2022
By David Klassen, P.Eng

Notes as recorded by the WWTA-AB representative David Klassen P.Eng. (Unofficial)

The information is for informational purposes only and should not be construed as professional advice or opinion. The writer has made reasonable efforts to ensure that the information provided is accurate at the time of writing. The content is provided "as is" and the writer makes no representations, warranties (express or implied), guarantees or assurances of any kind as to the accuracy, currency or completeness of the information provided. Use of the content is at your own risk.

1. Regional Association Reports
    a. Lots of activity with members preparing for QC program.
    b. Bracing guides were discussed in MB/Sask report, the technical committee requested that they and Alberta share our guides with committee. I forwarded ours with a note they are copyright protected and to contact Dave P prior to further distribution or use.

2. Priority was to review changes needed to TPIC2019 to align with the now published 2020 NBCC
    a. Reviewed summary of changes to code and proposed revisions to TPIC (reference notes)
        i. Serviceability (deflection) load combinations reduced companion from 0.5 to 0.35 for live and wind. Added second category for materials subject to creep (TPIC confirmed it applies to truss). The live load was split into transitory and sustained (ie snow vs soil).
        ii. CCMC method for floor truss design has an exclusion for rhythmic loading (dance studios require a dynamic analysis).
        iii. There may be small changes to climatic data.

iv. Specifically states that if the new building affects an existing building, design consideration must be given to the existing ie new snow drift on existing structures.
v. Snow drift clarification added for corners where drift loads meet.
vi. Solar panel loading defined in part 4 (snow & wind) - not clear how it applies to part 9. There are 3 categories, low and parallel to roof, high and parallel to roof, not parallel. Our technical committee will need to review implications for the solar ready guidelines.
vii. Added external pressure coefficients on parapet wind loads.
viii. Part 9 added provision for drift when step is greater than 2m when upper area is large. Not a true drift, flat line 50% extra for set length from step where upper roof is over 600sqm and 2/12 or lower pitch. This is not expected to affect single family homes.
ix. Clarified rafter to joist nailing tables.
x. Section 9.23.14.11 Roof Trusses
    1. Simplified and references TPIC 2019. There no longer is an allowance for 1x4 bracing.
xi. Farm building breakdown by size: max 3 story and no more than 600sqm = 1995 FBC. Part 2 of code for larger farm buildings. Biggest impact is 48" o/c trusses lose the system factor when not classified as Farm.

b. Final review of TPIC revisions emailed last week and vote for approval due today to meet publication deadline.

3. Ongoing task group work for TPIC2024, here's the notable highlights:
    a. Plating Sliders to eliminate CLB
        i. Final review underway for approval.
    b. Bottom chord bracing with drywall
        i. Reviewed Mitek letter allowing drywall to brace bottom chords for Part 9 trusses under certain circumstances, does not apply to large cantilevers.
        ii. Require bracing at pitch breaks.
        iii. Will adopt letter as a tech bulletin or position statement.
    c. NFBCC 1995 ground snow loads
        i. Group recommends using the GSL specified at the time of the code ie 1995 NBCC.
        ii. Discussed which TPIC changes apply vs not. QC requirements would not apply.
        iii. Will add a position statement on the website with minimum recommendations and code references ie CSA S347 and O86 should refer to what was use at the time of the code.

4. New Business
    a. CanREA solar panel installation methods

i. Asked by solar industry to endorse a standardized procedure to retrofit existing roofs.
ii. Group agreed there is not a simple generic solution, each situation is different so our recommendation remains to hire an engineer to review the design.

Canadian Wood Truss Meeting June 16, 2022

Other than the review of the business of the CWTA the major topic of discussion was how to proceed with the formation of a Certifying Body accredited with the SCC in order to provide truss plants a path to complying with the CSA S349:20 standard.

The CWTA agreed to contract the development of the scheme to the Western Wood Truss Association of Alberta.

It was moved by Mark Fox and seconded by Barry Schick that the CWTA move forward with Option 2 for the development of the Scheme to get accredited for the management of the National QA/QC program; and that a 2 year contract be entered into with the WWTA-AB for development of the Scheme for a total contract value of $70,000 allocated with $20,000 to be paid in 2022 and $50,000 to be paid in 2023. CARRIED

So I am going to be pretty busy working on this.

WWTA Online Training

If you have not yet taken a look at the WWTA online training program I would encourage you to, as no doubt you will be hiring new workers in the near future and it is a good method to get them productive earlier and safer. If you want an overview of the program go to the WWTA website at: http://www.wwta.ab.ca/truss-training-online.html

Did You Know?

In most plant the method of tacking a plate in place is using a common hammer, so this is a tool that is used very frequently and I feel the quality of this tool is overlooked. Just like a marathoner needs the right pair of shoes, it makes a difference, and builders should make sure they have the right one for them.

The best choices would be of a sufficient weight to tack the plate with one hit, have some shock reduction to reduce vibration, and a straight claw to lift the lumber.