



**NCC 2022
Energy Efficiency
Volume 2**



This webinar will start shortly to allow participants to join.



The VBA respectfully acknowledges the Traditional Owners and custodians of the land and water upon which we rely. We pay our respects to their Elders past and present.

We recognise and value the ongoing contribution of Aboriginal people and communities to Victorian life.

We embrace the spirit of reconciliation, working towards equality of outcomes and an equal voice.

Welcome

Today you will hear from:

**Practitioner
Education
Series**



Shaun Breden

Technical Specialist
Technical and Regulation
VBA



Practitioner Education Series

As Victoria's Building and Plumbing Regulator, we **safeguard Victoria's future liveability, promoting safe, compliant buildings, built to last**

Our role is not to set policy, but to **support industry to understand and comply with the rules.**

Our Practitioner Education series **helps support the industry by providing practical insights, evidence-based strategies and useful resources.**

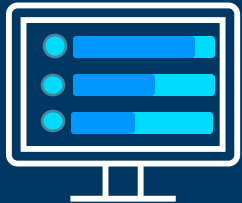
Housekeeping



Today's session is **recorded** and will be available on the VBA website



Questions can be submitted and voted on via the Q&A function. For any questions that we don't have time to answer in the session, the answers will be emailed to you after the webinar



We will be conducting **live polls** today, which will automatically appear on your screens



This webinar is scheduled to run for 60 minutes, but in some cases may run over time in order to cover all material

Webinar questions



We endeavour to answer as many of your questions as we can during the webinar.



However, due to the high volume of questions that we receive, we may not be able to answer your question during the webinar time.



Approximately two weeks after this webinar, you will receive an email with answers to all of the questions that were asked in this webinar.

We thank you for your patience.

Purpose of the webinar

Why is this webinar important?



To discuss compliance with NCC 2022 Energy Efficiency



To support ABCB's webinars on changes



To give a regulatory overview of NCC compliance



To address some common questions around NCC 2022 Energy Efficiency and compliance

Learning goals

After this webinar, you should be able to:



Have an improved bigger picture understanding of how to achieve NCC compliance for energy efficiency



Have an improved familiarity with the NCC Energy Efficiency changes

Today we will cover

Scope

NCC Volume 2

Class 1 and 10 buildings

Energy efficiency provisions



Today we will cover

1. Energy efficiency NCC 2022 compliance overview
2. Performance requirements
3. Deemed-to-satisfy (DtS) provisions
4. Performance solutions
5. Governing requirements
6. Transitions from NCC 2019-2022



Energy efficiency NCC 2022 compliance overview





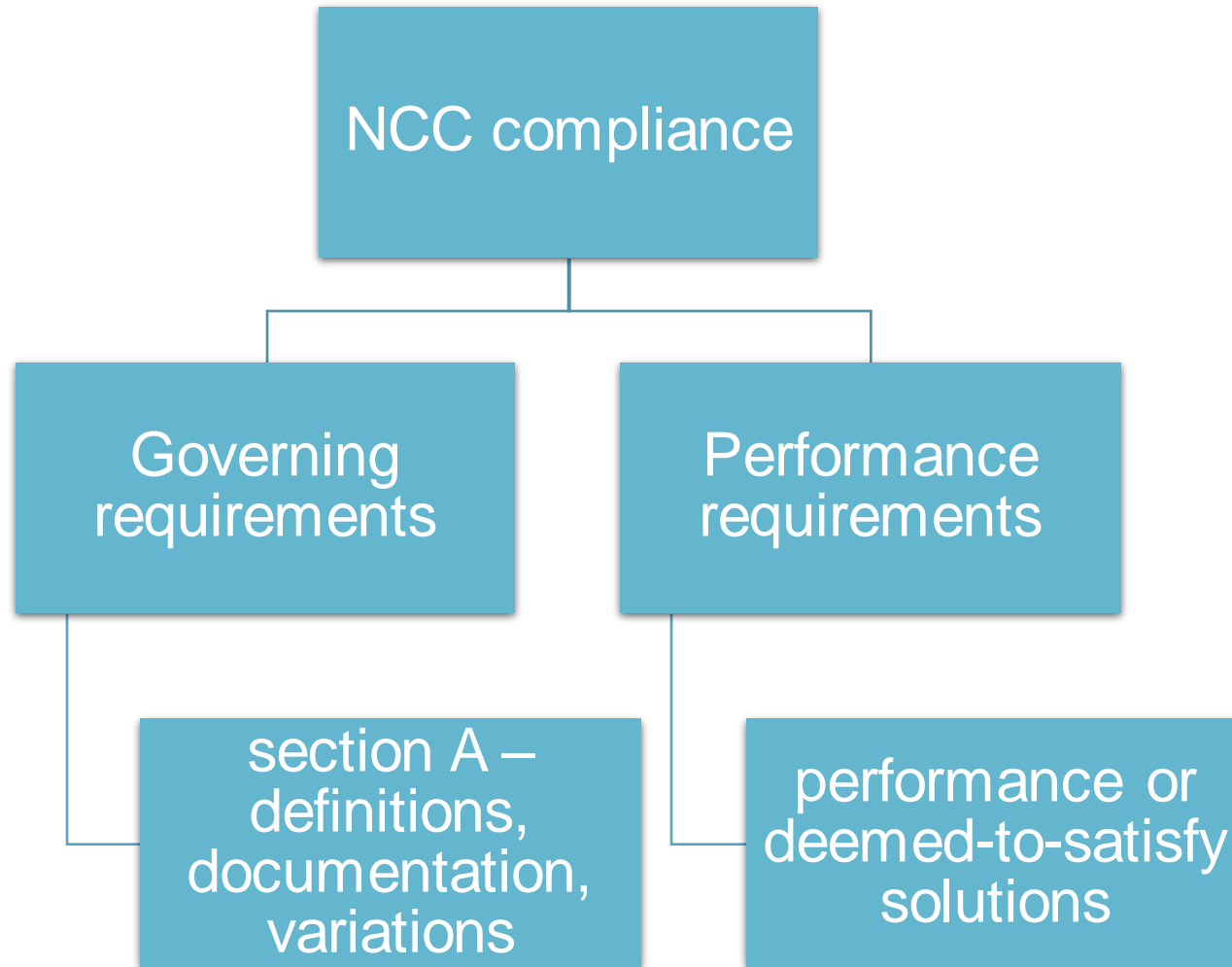
Objectives

- **reduce energy consumption and energy peak demand; and**
- **reduce greenhouse gas emissions; and**
- **improve occupant health and amenity.**



Functional Statements

- **reduce the energy consumption and energy peak demand of key energy-using equipment; and**
- **reduce greenhouse gas emissions that occur as a result of a building's energy consumption and energy source; and**
- **improve occupant health and amenity by mitigating the impact of extreme hot and cold weather events, and energy blackouts.**



A2G1



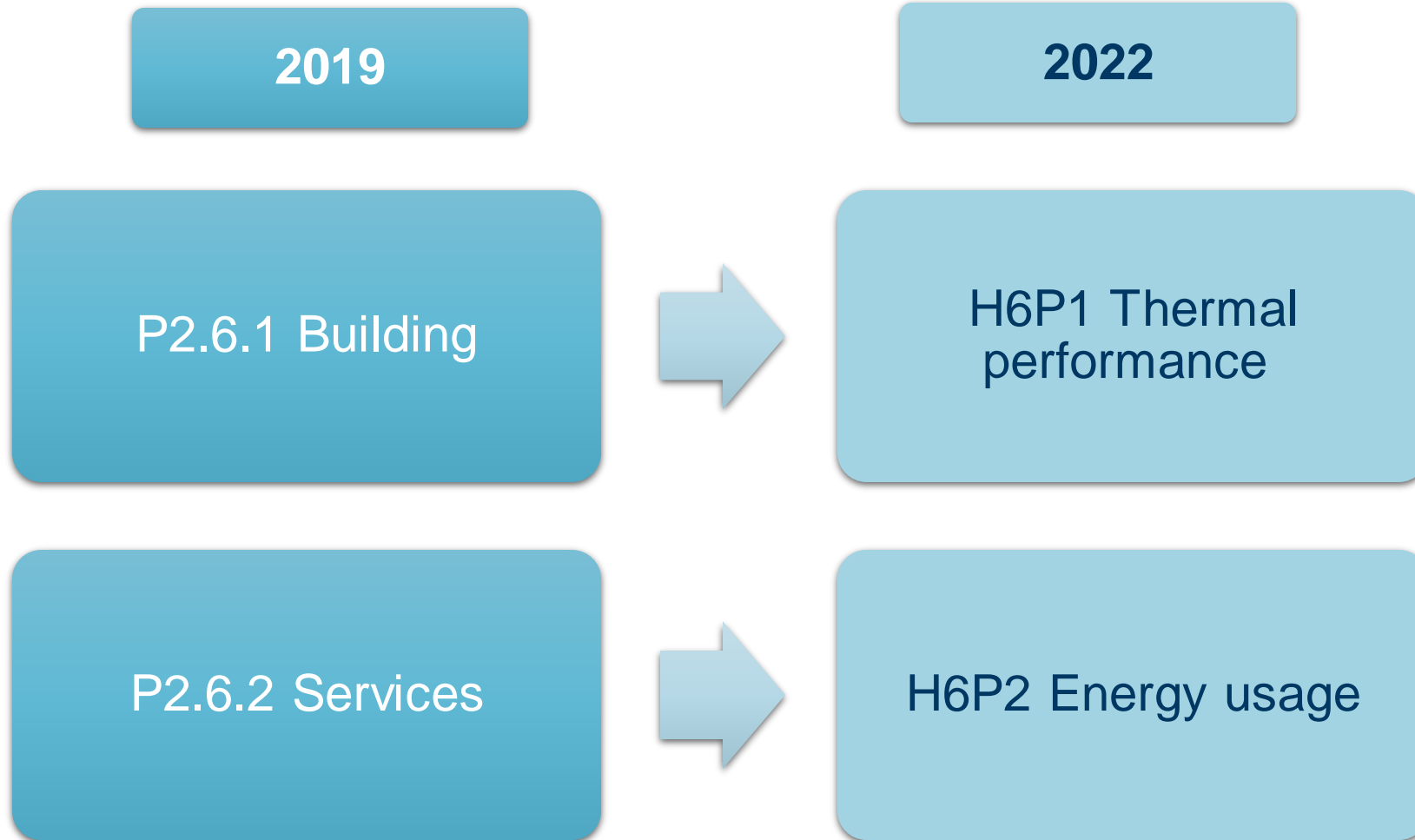
NCC 2022
Volume 2 Part A



Performance requirements



Performance requirements



Performance requirement changes

NCC 2019	NCC 2022
<p data-bbox="657 554 937 602">Qualitative</p> <p data-bbox="496 682 1108 796">“to the degree necessary” “appropriate to”</p>	<p data-bbox="1498 554 1803 602">Quantitative</p> <p data-bbox="1294 682 2007 796">“must not exceed” a numerical value limit</p>

Greater emphasis on domestic services (H6P2)

Facilitates the whole-of-home DtS pathway

Example of a quantified performance requirement:

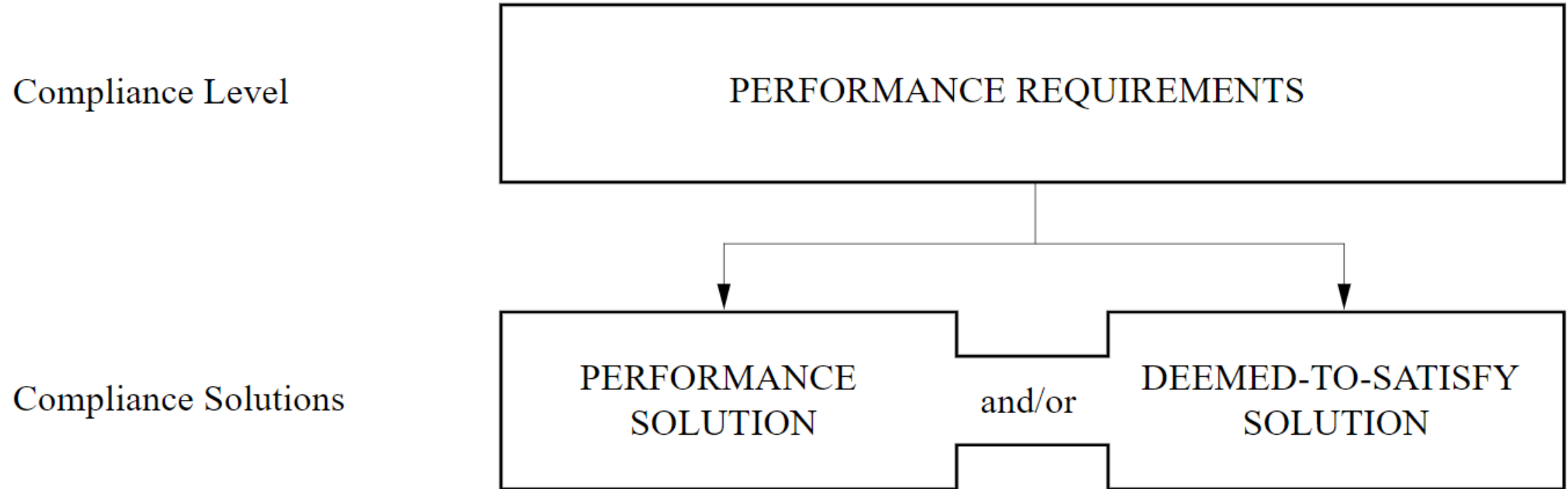
Performance Requirements

H6P1 Thermal performance

[2019: P2.6.1]

- (1) The total *heating load* of the *habitable rooms* and *conditioned spaces* in a building must not exceed the *heating load* limit in Specification 44.
- (2) The total *cooling load* of the *habitable rooms* and *conditioned spaces* in a building must not exceed the *cooling load* limit in Specification 44.
- (3) The total *thermal energy load* of the *habitable rooms* and *conditioned spaces* in a building must not exceed the *thermal energy load* limit in Specification 44.

Figure A2G1 NCC compliance structure



Quick quiz

Q. Do I need to quantify the performance requirements in every situation?

Yes

No



Quick quiz

Q. Do I need to quantify the performance requirements in every situation?

Yes

No

Only needed when using a first principles performance solution. Not required for:

- DtS solution; or
- Performance solution showing DtS equivalence



Deemed-to-satisfy (DtS) provisions



DtS compliance overview

Compliance mechanism is largely unchanged

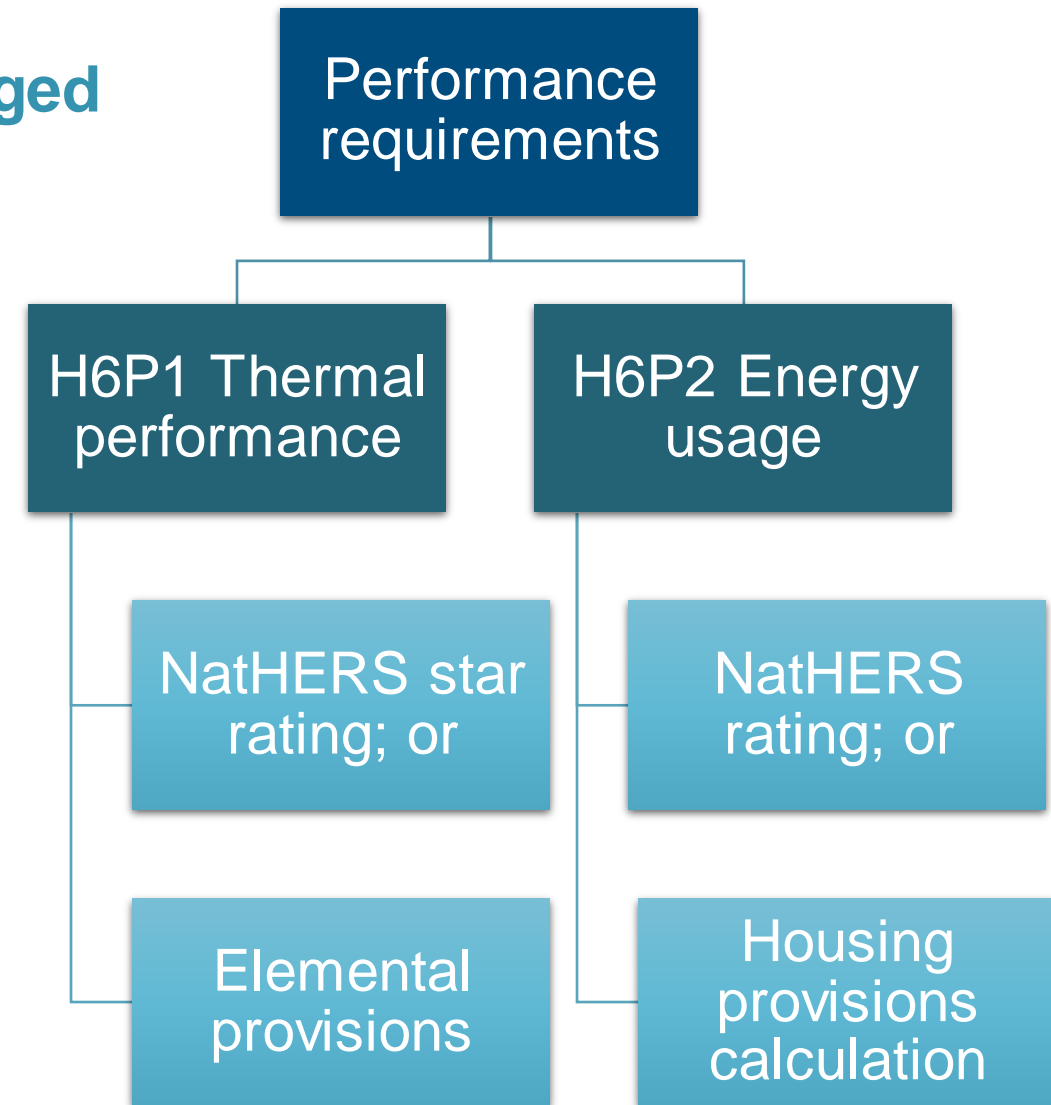
Mechanism:

Deemed to satisfy provisions:

- NCC 2019 – 3.12.0
- NCC 2022 – H6D1

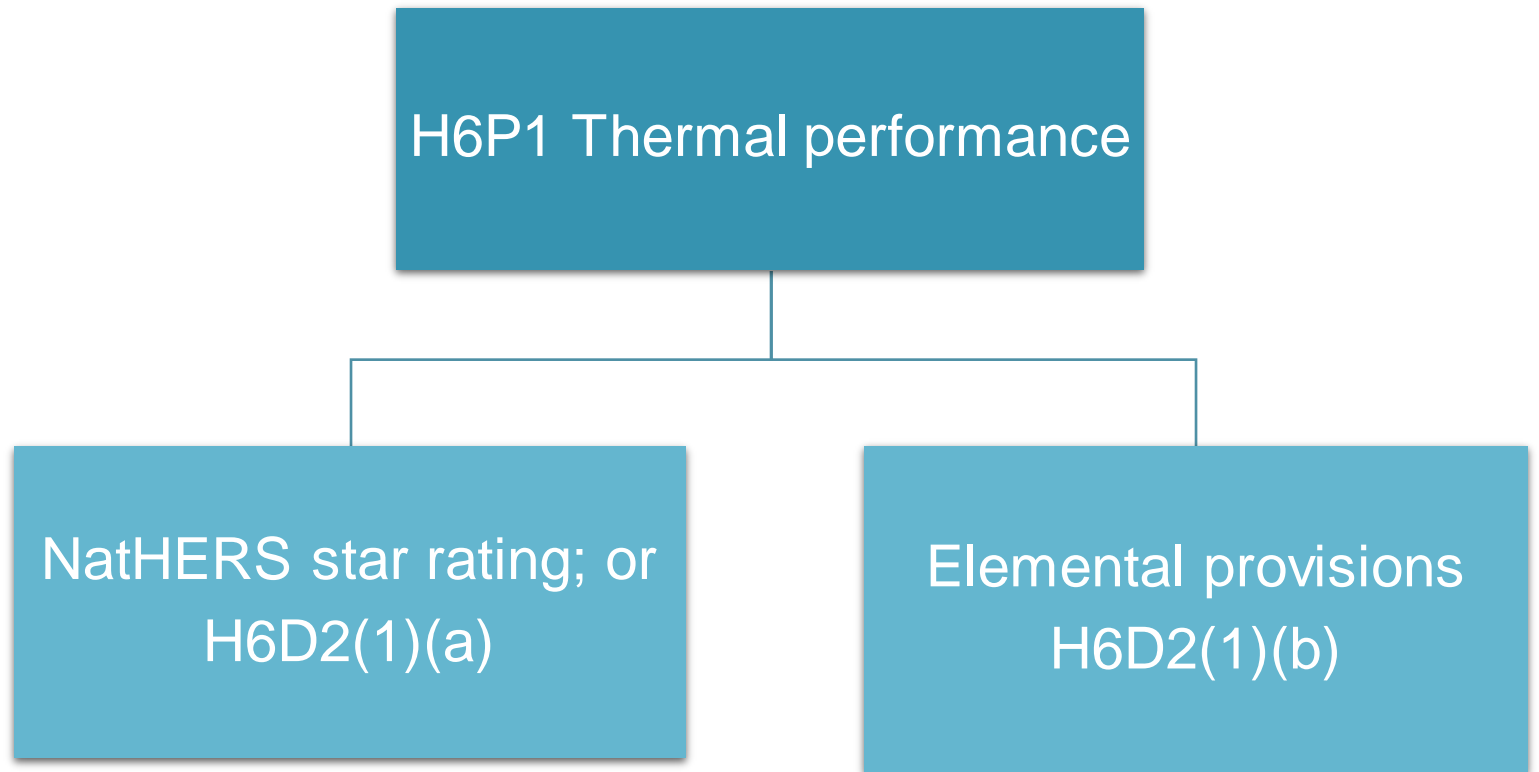
Application of part:

- NCC 2019 – 3.12.0
- NCC 2022 H6D2



Thermal performance DtS – application of part

H6D2
Application
of part H6



Comply with:

- Specification 42
- Using *house energy rating software*

Specification 42:

- Increases star rating from 6 to 7 stars
- Heating and cooling load limits revised (ABCB standard)



NatHERS
website



Additional DtS provisions under Specification 42 (S42C4):

- Insulation
- Thermal breaks
- Ceiling insulation compensation
- Floor edge
- Building sealing



ABCB housing provisions – Part 13.2 to 13.5

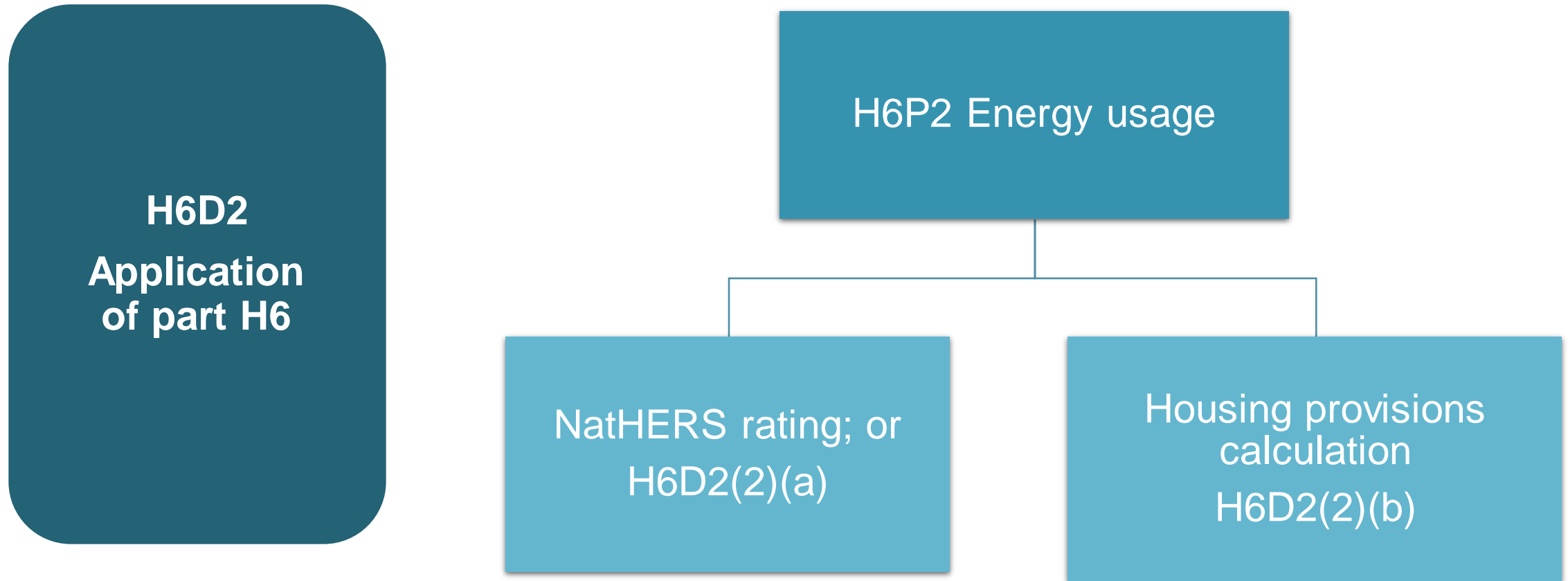
- Building fabric
- External glazing
- Building sealing
- Ceiling fans (not required in Victorian climate zones)

Elemental provisions have a limited scope, particularly for external walls.



ABCB Housing Provisions:
Part 13





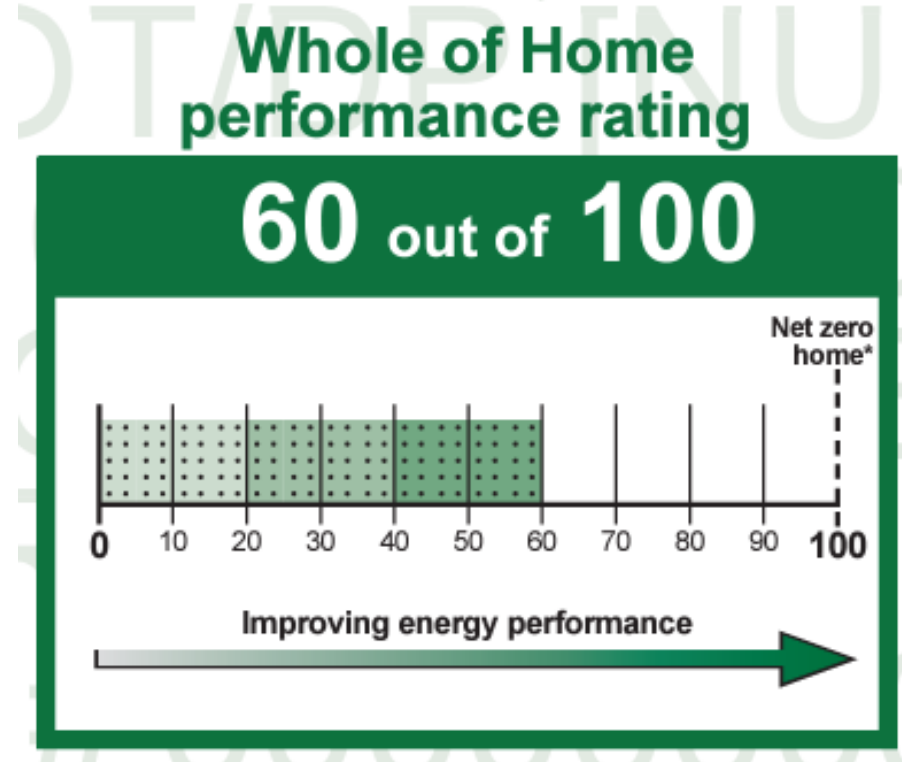
NatHERS pathway – NEW to 2022

Comply with:

- Specification 42
- Using *house energy rating software*

Specification 42 requirement:

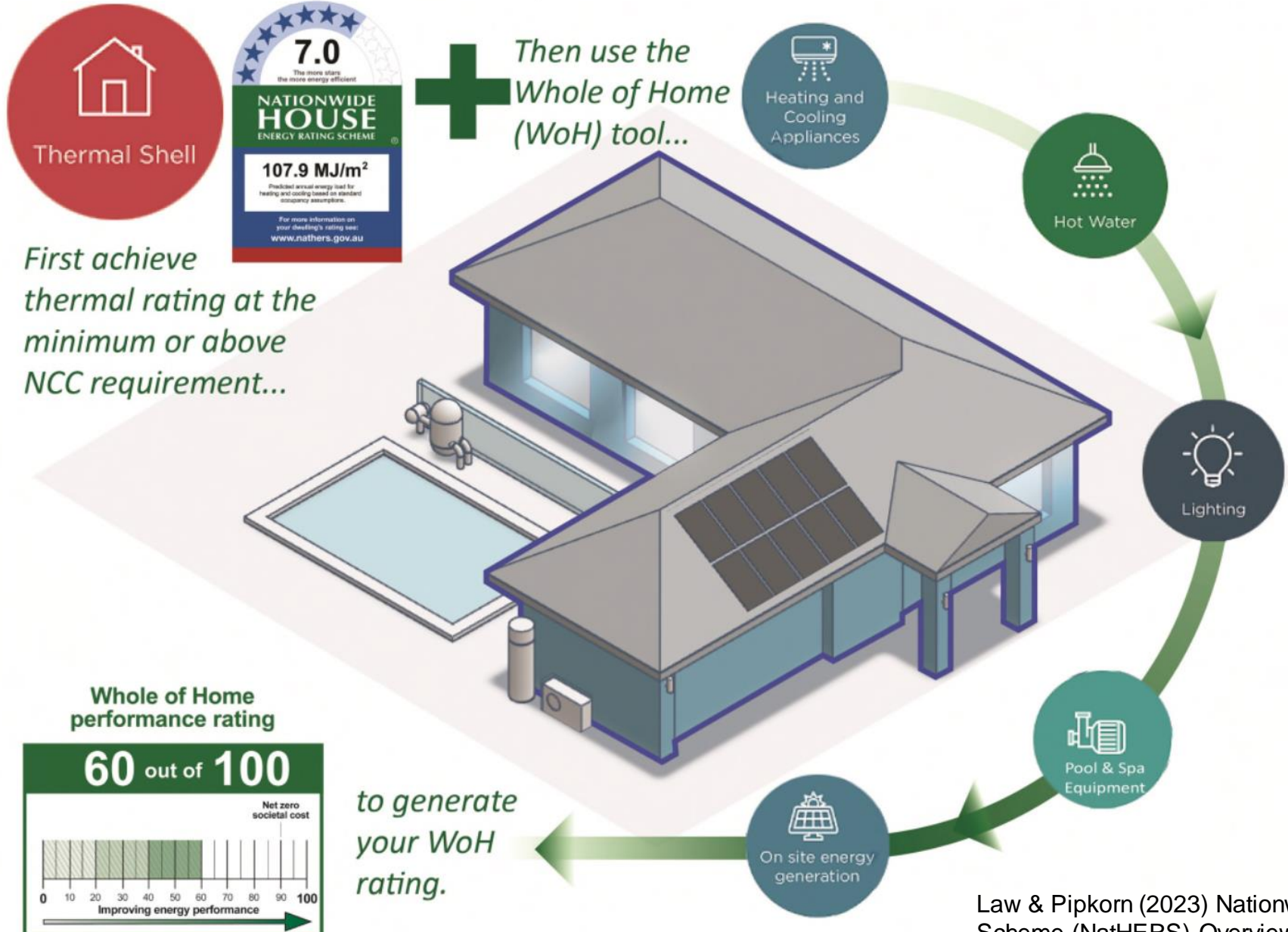
- Whole-of-home rating not less than 60
- Also comply with Part 13.7 services of housing provisions



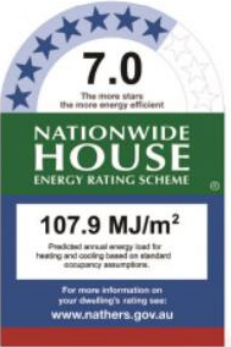
Example report
NatHERS website



NatHERS pathway

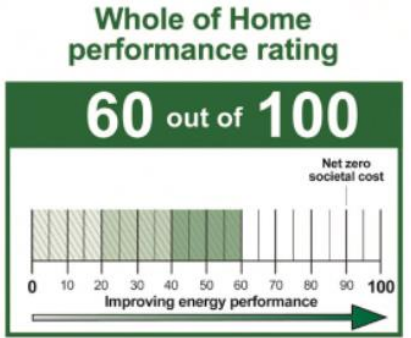
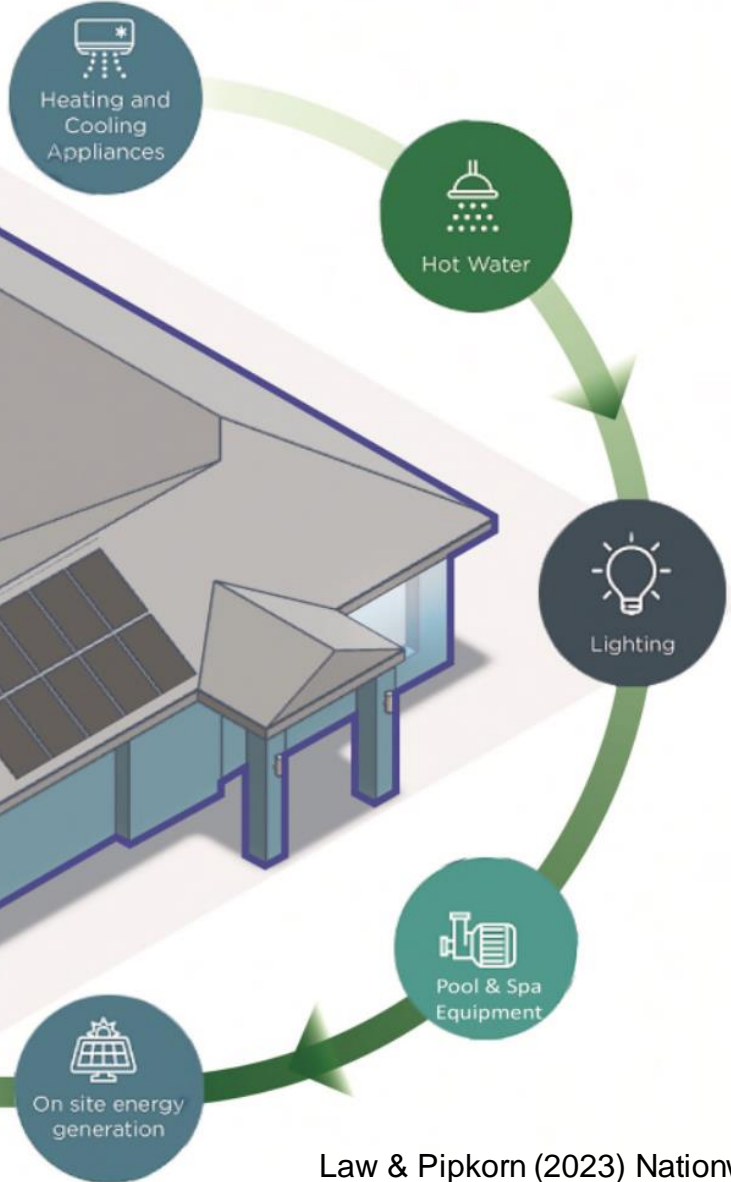


Thermal Shell



First achieve thermal rating at the minimum or above NCC requirement...

Then use the Whole of Home (WoH) tool...



to generate your WoH rating.

- Part 13.6 – whole-of-home energy usage (**new**)
- Part 13.7 – Services

Compliance with part 13.6

- Calculation (a) use must not exceed calculation (b)
- Limited to floor area less than 500m²
- ABCB calculator



Part 13.6 Whole-of-home energy
usage of ABCB Housing Provision
Standard



Inputting Values

- ABCB Housing Provisions – Part 13.6 tables
- ABCB Standard for Whole-of-Home Efficiency Factors

Flexibility

- ABCB standard offers some flexibility.
- Example: For gas heating and heat pump appliances, the factors must be obtained from the closest rating that can be chosen from the tables

Quick quiz

If NatHERS is used for thermal performance, is it mandatory to use NatHERS for energy usage?

Yes

No



Quick quiz

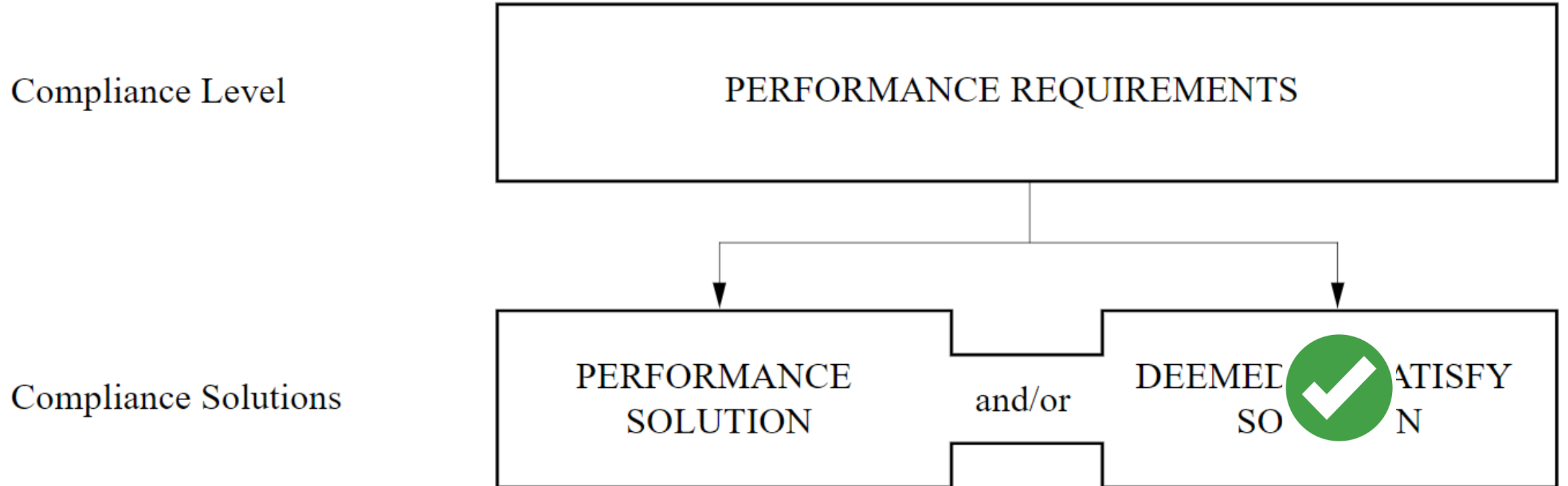
If NatHERS is used for thermal performance, is it mandatory to use NatHERS for energy usage?

Yes

No: they are separate performance requirements and have separate DtS pathways



Figure A2G1 NCC compliance structure



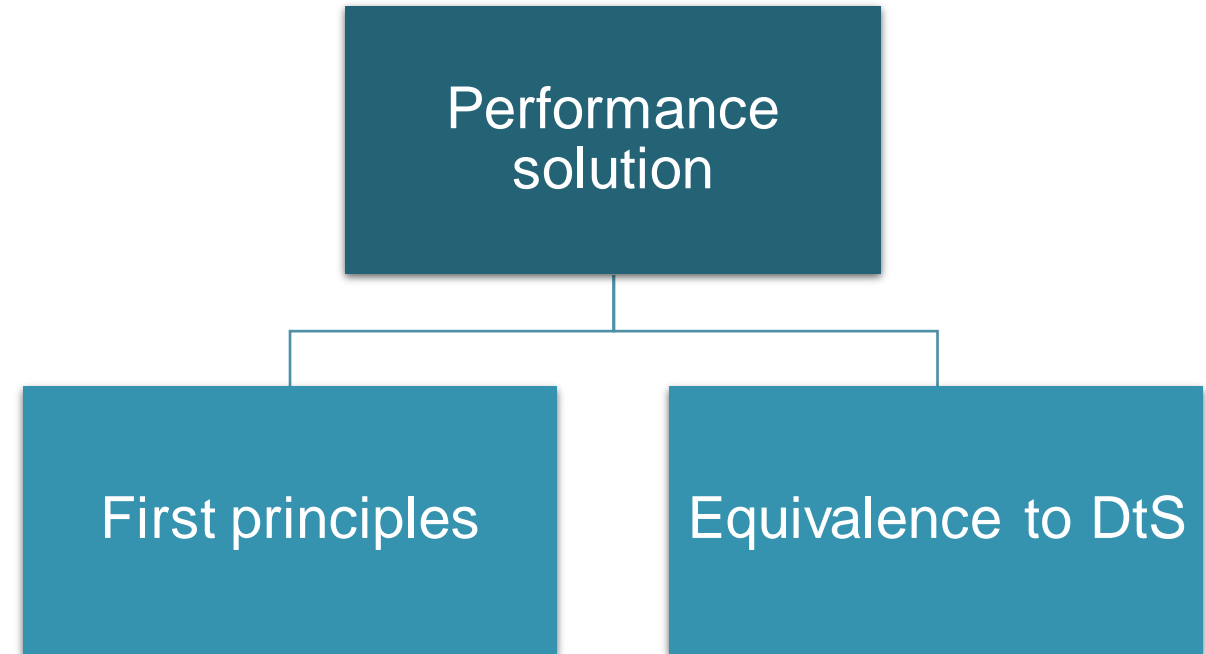
Performance solutions



Process specified under A2G2 remains the same (A2.2 in NCC 2019), and is achieved through:

- Direct against performance requirement
- At least equivalent to DtS

Quantified performance requirements will influence performance solutions





Quantified outcomes should be very similar regardless of the method used to satisfy the performance requirements



First principles approach

Quantify directly against:

- H6P1 Thermal performance – using Specification 44
- H6P2 Energy usage – using GEMS determinations and lighting power density

Further guidance on quantified performance requirements likely, particularly H6P1

Equivalence to DtS

Relies on calculating equivalence to DtS Provisions

- Many ways to achieve
- Verification methods available

Verification using a reference building (VURB) H6V2

- Robust process using alternative software
- Uses DtS elemental to calculate thermal loads

Performance solutions using the VURB

Q

Common question: There are limited DtS elemental provisions now available for the reference building, can I still use H6V2 in most situations?

A

Yes. H6V2 clarifies the process of establishing a hypothetical building to determine heating and cooling loads. H6V2(3) must be read carefully, as it sets out what aspects of the reference building and proposed building need to be the same.

Please remember...



Any performance solution needs to be appropriately documented and show how compliance is achieved

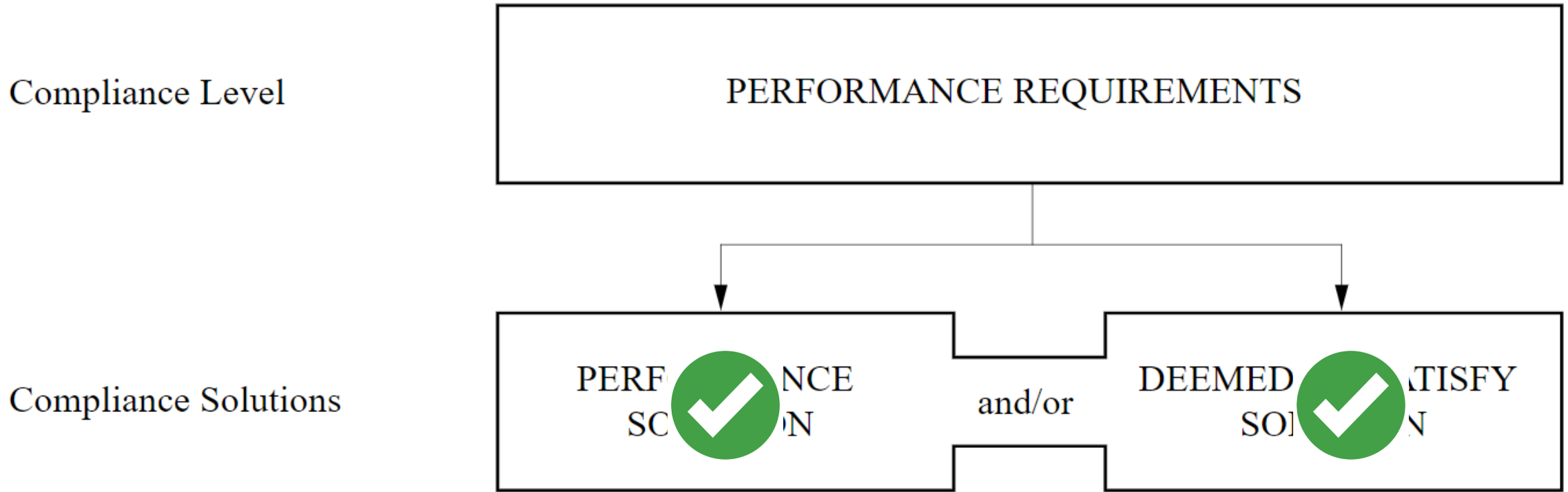


Performance requirements cannot be merged together, and must be independently satisfied



Example: Using solar PV (H6P2) to offset a lower star rating (H6P1) merges two performance requirements. H6P1 considers the thermal performance of the building without applied energy (H6P2)

Figure A2G1 NCC compliance structure



Governing requirements



A5G9 – NatHERS evidence of suitability

Evidence of suitability change:

- Certificate must be issued in accordance with the NatHERS scheme

Note:

- An assessment method for performance and DtS solutions
- Is applicable to NatHERS pathways only
- Not applicable to the VURB (different software)

Is a NatHERS accredited assessor required under the evidence of suitability change?

No - compliance with NatHERS rules for certificates is different to assessor accreditation

However, there are more checks needed for non-accredited certificates

- Practice note EE-03 provides further detail



A5G9 does not mandate the use of a NatHERS accredited assessor



PN EE-03
New Residential
Buildings



Change:

energy efficiency variation from 2019 deleted in 2022

Using 2019 NCC

No change to the current variation – e.g. solar hot water / rainwater tank

Using 2022 NCC

The solar hot water/ rainwater tank variation is no longer required

- Future regulatory changes may require rainwater tanks
- Plumbing regulations aligning with NCC 2022

Transitions from NCC 2019-2022



Transition timeline



1 May 2023 Optional uptake



1 May 2024 Mandatory



Beyond 1 May 2024
Section 10 of the Building Act may apply

Section 10 (2) of the Building Act 1993:

A building regulation, or an amendment to a building regulation, does not apply to the carrying out of building work if the relevant building surveyor is satisfied, and certifies in writing, that substantial progress was made on the design of the building before the building regulation or amendment commenced.

- Minister Guidelines MG-13 provides detailed guidance
- A building surveyor has discretion in applying Section 10
- It is not a 'given' in every scenario



Minister guidelines
MG-13



Notes - additional mandatory instructions

Notes

From 1 May 2023 to 30 September 2023 Part 2.6 and Part 3.12 of NCC 2019 Volume Two Amendment 1 may apply instead of Part H6 of NCC 2022 Volume Two. From 1 October 2023 Part H6 of NCC 2022 Volume Two applies.

- Applies to NCC parts only (e.g. H6)
- Whole part must be used (e.g. the full H6 from the NCC edition)

Example:

A compliant assessment during transition relied on:

- Part 2.6 and 3.12 of NCC 2019 for **energy efficiency**; and
- Part H4 of NCC 2022 for **condensation management**

NCC compliance:

- Stringency increase for NCC compliance
- NCC compliance mechanism unchanged (i.e. A2G1 compliance)

Regulation 233 – building regulations 2018

- Consent to partial compliance unchanged by NCC 2022

Quick quiz

1. The VURB (verification method H6V2) relies on which compliance pathway?

A: DtS solution

B: Performance solution

2. When using a DtS approach NCC 2022 a solar hot water or rainwater tank is required.

A: True

B: False

3. Under a performance solution, using high efficiency appliances is a reasonable means of offsetting a reduced thermal performance star rating.

A: True

B: False

4. Using NCC 2019 for condensation management and NCC 2022 for energy efficiency is permitted during the transition period.

A: True

B: False



Quick quiz

1. The VURB (verification method H6V2) relies on which compliance pathway?

A: DtS solution

B: Performance solution

2. When using a DtS approach NCC 2022 a solar hot water or rainwater tank is required.

A: True

B: False

3. Under a performance solution, using high efficiency appliances is a reasonable means of offsetting a reduced thermal performance star rating.

A: True

B: False

4. Using NCC 2019 for condensation management and NCC 2022 for energy efficiency is permitted during the transition period.

A: True

B: False



Conclusion

Today we have covered:

- An overview of Energy Efficiency compliance within NCC 2022
- Victorian specific changes

After today's session, you should be able to:

- Have a clearer understanding of the Energy Efficiency changes of NCC 2022

Q & A



Pre-submitted questions

Q1. What are the practical/ cost effective ways to achieve a 7-star rating?

Q2. What are the biggest non-compliances you are seeing in the industry?

Q3. How can a home comply when there's an alterations or additions?

Thank you!

After this webinar:

Later today

We'd love your feedback!

You'll receive an email with a quick survey

You'll receive your attendance certificate via email

In approximately 2 weeks

You'll receive an email with the answers to all of today's questions that we didn't get to, as well as those that we did

Practitioner

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Series

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