

BASIX / NatHERS 7-star compliance in NSW

Fact sheet, service details and important considerations.

Mandatory compliance with 7 stars NatHERS rating for certain types of residential developments in NSW is in effect since 1st of October 2023. Compliance with this stringent and ambitious energy efficiency target requires industry awareness, educated design and close and constructive coordination between architects and energy efficiency assessors like Eco Certificates. Based on our decades of experience, we've developed the following fact sheet which outlines the most important facts and parameters of our service for provision of NatHERS thermal comfort modelling and BASIX certificates under these new requirements.

Our Role

Our role as assessors is to report the requirements of your development for compliance with the National Construction Code in general and NSW Department of Planning regulations in particular. The rules, mandates, computer software packages and modelling protocols are created and enforced by the federal and state government. We have no control over these regulations and have no visibility into the internal algorithms of the software.

Thermal comfort modelling software

The thermal comfort compliance thresholds are fixed by the regulations. Performance of a model can only be determined and reported by the NatHERS thermal comfort simulation software and it cannot be changed by assessors. We can adjust various parameters in the model to fine tune the model in order to achieve compliance with the minimum performance requirements however, these parameters have boundaries and limitations and cannot be arbitrarily manipulated. Assessors won't be able to explain why the results of a certain simulation might not conform with the overall pre conceptions or established common sense.

Assessment process

As we increase the insulation level of various elements, the effectiveness of these measures diminishes. This means, after a certain point, increasing the insulation would not have any tangible effect on the performance of a model. We always optimise our models to the maximum effectiveness of insulation before introducing high performance glazing options.

We introduce high performance glazing gradually until we achieve compliant thermal comfort results. Combined with above, this approach ascertains that we have delivered the most cost-effective option possible under the regulations. If the model still does not comply after the highest performing glazing options in the modelling software are introduced and we've exhausted all other fine-tuning opportunities, the overall design of the development is considered non-compliant with the NCC requirements and it must be changed! This would be a common occurrence for developments with high percentage of glass versus floor area and the ones which do not follow and implement the best practices of passive design accurately and in an educated manner.

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Recommendations

Bring your design to us for preliminary assessment rounds at the concept design phase before committing to extensive drafting and consultancy expenses.

For active projects, be flexible and willing to accept intrusive and substantial changes to your design. We're facing a one-way street with no possibility of negotiation with the Australian regulations and until a design satisfies the regulations, it cannot receive construction approval. We might be required to undergo numerous rounds of optimisation and changes and they would attract proportional fees.

Manage your client's expectations and educate them on the realities and limitations of the current regulations. Extensive use of glazing, high exposure designs or unfavourable site conditions will not have a cheap and practical way for compliance and the overall design might simply be impossible to get approved regardless of the high performance of individual building components.

How to Design for 7 stars

By adhering to passive solar design principles, most dwellings can achieve 7-stars.

- Better design and orientation with respect to the sun in order to take advantage of opportunities for passive heating in winter while shading the home in summer.
- In order to prevent high heat gain, install external blinds or other forms of shading, internal ceiling fans, improve window ventilation, limit western glazing and use lighter external wall and roof colours.
- For high heat loss scenarios, increase solar exposure, prevent southern glazing, make living zones north facing, evaluate the external construction fabric and consider using darker external wall and roof colours.
- Limit the excessive use of glazing as much as practicable. Designs with extensive glazing areas are the most susceptible to become non-compliant altogether and require numerous rounds of change, assessment and optimisation.

Resources

<https://www.yourhome.gov.au/passive-design>

<https://ncc.abc.gov.au/news/2022/building-7-stars-top-tips-and-guidance>

<https://www.nathers.gov.au/owners-and-builders/build-better-homes>

<https://www.energy.vic.gov.au/for-households/7-star-energy-efficiency-building-standards/common-questions>

Final Consideration

Our job is to obtain construction approval for your project by complying with the regulatory requirements in our area of expertise. At the same time, it is our goal to minimise your cost and remove procurement and construction barriers as much as practicable. In order for us to be able to serve you to the best of our abilities, we need you to understand that **we are on your side and on the same team.**