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## Proposed Change 1883

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<b>Code Reference(s):</b>	<b>NBC20 Div.B 3.8. (first printing)</b>
Subject:	Accessibility, Visitability and Adaptability of Dwelling Units
Title:	Adaptable Dwelling Entrance
Description:	This proposed change increases the clear width of an entrance to a dwelling unit to accommodate the use of mobility devices.
Related Proposed Change(s):	PCF 1880, PCF 1881, PCF 1957, PCF 2028

This change could potentially affect the following topic areas:

- |  |   |
|--|---|
| <input type="checkbox"/> Division A                                | <input checked="" type="checkbox"/> Division B              |
| <input type="checkbox"/> Division C                                | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations                       | <input checked="" type="checkbox"/> Housing                 |
| <input checked="" type="checkbox"/> Small Buildings                | <input checked="" type="checkbox"/> Large Buildings         |
| <input type="checkbox"/> Fire Protection                           | <input type="checkbox"/> Occupant safety in use             |
| <input checked="" type="checkbox"/> Accessibility                  | <input type="checkbox"/> Structural Requirements            |
| <input type="checkbox"/> Building Envelope                         | <input type="checkbox"/> Energy Efficiency                  |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing                           |
|  | <input type="checkbox"/> Construction and Demolition Sites  |

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### General information

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See the summary for subject Accessibility, Visitability and Adaptability of Dwelling Units.

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### Problem

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Being able to enter and exit one's dwelling unit is fundamental to participating in several activities of daily living. However, for Canadians who regularly use wheeled mobility aids (e.g., wheelchairs), the NBC minimum width requirements for door entrances to dwelling units are not wide enough to accommodate most devices: approximately 10% of modern wheelchairs cannot fit through a doorway width that complies with the current NBC requirements (i.e., clear width of 745 mm, corresponding to a door width of 810 mm)(1).

As a result, some dwelling units are challenging to enter and exit, and some others are entirely inaccessible. Additionally, where a person using a mobility aid can, with difficulty, enter a dwelling unit, the level of impedance presents a concern during emergency egress. This level of impedance is unacceptable and needs to be addressed by the NBC.

Because the mobility needs of people evolve over time, the entrance of a dwelling unit that was once suitable for the occupant's level of mobility may become inaccessible or present unnecessary hardship as the occupant ages. As a result, occupants may be required to alter their dwelling units to accommodate their changing level of mobility or, if the scope of the alteration is too large, or if the dwelling unit is rented, occupants may need to move to a more suitable dwelling unit, engaging costs and associated stress. Both of these issues can be addressed by introducing NBC requirements for a wider entrance to dwelling units to reduce the need for and costs of alterations for accessibility.

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## Justification

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This proposed change introduces a new requirement that every dwelling unit have at least one entrance with a minimum clear width of 850 mm when the door is in the open position. By requiring at least one entrance that provides a clear width of 850 mm (achievable using a standard 915 mm door opened to approximately 100 to 110 degrees), this proposed change would permit approximately 99% of modern wheelchairs to pass through(1). This proposed change would help to limit the probability that a person who uses a wheeled mobility aid would be unable to enter or exit the dwelling unit and use its facilities.

Introducing requirements for larger entrances for dwelling units would also reduce the costs of alteration to owners should they need to modify their dwelling unit for accessibility as their needs evolve.

Approximately 10% of Canadians have a disability related to mobility(2), while 1% of Canadians in the community regularly use wheelchairs or scooters(3). However, the prevalence of disabilities related to mobility and the associated use of assistive aids increases with age, with over 18% of community-dwelling Canadians over the age of 75 regularly using canes or walking sticks, 14% regularly using walkers and rollators, and 4% regularly using wheelchairs or scooters(3,4). As such, many Canadians will use assistive aids for mobility at some point in their lives and will require larger entrances to access their home.

While the proposed change does not address every aspect of the alteration of dwelling units for accessibility, this change is expected to contribute to reducing the costs of alterations to persons who require larger entrances for accessing their home.

### References:

(1) Steinfeld, E., Maisel, J., Feathers, D., and D'Souza, C. (2010). Anthropometry and standards for wheeled mobility: an international comparison. *Assistive Technology*, 22(1), 51-67.

(2) Statistics Canada. (2020). Canadians with a mobility disability. <https://www150.statcan.gc.ca/n1/pub/11-627-m/11-627-m2020085-eng.htm>

(3) Smith, E. M., Giesbrecht, E. M., Mortenson, W. B., and Miller, W. C. (2016). Prevalence of wheelchair and scooter use among community-dwelling Canadians. *Physical Therapy*, 96(8), 1135-1142.

(4) Charette, C., Best, K. L., Smith, E. M., Miller, W. C., and Routhier, F. (2018). Walking aid use in Canada: prevalence and demographic characteristics among community-dwelling users. *Physical Therapy*, 98(7), 571-577.

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## PROPOSED CHANGE

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### **[3.8.] 3.8. Accessibility**

(See Note A-3.8.)

**[3.8.1.] 3.8.1. Scope****[3.8.1.1.] 3.8.1.1. Scope****[3.8.2.] 3.8.2. Application****[3.8.2.1.] 3.8.2.1. Exceptions****[3.8.2.2.] 3.8.2.2. Entrances****[3.8.2.3.] 3.8.2.3. Areas Requiring a Barrier-Free Path of Travel****[3.8.2.4.] 3.8.2.4. Access to Storeys Served by Escalators and Moving Walks****[3.8.2.5.] 3.8.2.5. Exterior Barrier-Free Paths of Travel to Building Entrances and Exterior Passenger-Loading Zones****[3.8.2.6.] 3.8.2.6. Controls****[3.8.2.7.] 3.8.2.7. Power Door Operators****[3.8.2.8.] 3.8.2.8. Plumbing Facilities****[3.8.2.9.] 3.8.2.9. Assistive Listening Systems****[3.8.2.10.] 3.8.2.10. Signs and Indicators****[3.8.2.11.] 3.8.2.11. Counters****[3.8.2.12.] 3.8.2.12. Telephones****[3.8.3.] 3.8.3. Design****[3.8.3.1.] 3.8.3.1. Design Standards****[3.8.3.2.] 3.8.3.2. Barrier-Free Path of Travel****[3.8.3.3.] 3.8.3.3. Exterior Walks****[3.8.3.4.] 3.8.3.4. Exterior Passenger-Loading Zones****[3.8.3.5.] 3.8.3.5. Ramps****[3.8.3.6.] 3.8.3.6. Doorways and Doors****[3.8.3.7.] 3.8.3.7. Passenger-Elevating Devices****[3.8.3.8.] 3.8.3.8. Controls**

**[3.8.3.9.] 3.8.3.9. Accessible Signs**

**[3.8.3.10.] 3.8.3.10. Drinking Fountains**

**[3.8.3.11.] 3.8.3.11. Water-Bottle Filling Stations**

**[3.8.3.12.] 3.8.3.12. Accessible Water-Closet Stalls**

**[3.8.3.13.] 3.8.3.13. Universal Washrooms**

**[3.8.3.14.] 3.8.3.14. Water Closets**

**[3.8.3.15.] 3.8.3.15. Water-Closet Stalls and Urinals for Persons with Limited Mobility**

**[3.8.3.16.] 3.8.3.16. Lavatories and Mirrors**

**[3.8.3.17.] 3.8.3.17. Showers**

**[3.8.3.18.] 3.8.3.18. Accessible Bathtubs**

**[3.8.3.19.] 3.8.3.19. Assistive Listening Systems**

**[3.8.3.20.] 3.8.3.20. Counters**

**[3.8.3.21.] 3.8.3.21. Telephones**

**[3.8.3.22.] 3.8.3.22. Spaces in Seating Area**

**[3.8.4.] -- Dwelling Units**

**[3.8.4.1.] --- Entrance Doorway Width**

**[1] --)** The minimum clear width of at least one entrance doorway of a *dwelling unit* shall be 850 mm when the entrance door is in the open position. (See Note A-3.8.4.1.)

**Note A-3.8.4.1. Location of Entrance Required by Article 3.8.4.1.**

For dwelling units having multiple entrances, care should be exercised when selecting an appropriate location for the doorway that is wide enough for use with common mobility aids. Relevant factors include, but are not limited to, proximity to parking, ease of access from the outside and from the main living space inside, and adequate clearance available to open the entrance door after installation.

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## Impact analysis

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### **Cost Impact**

The overall cost impact of this proposed change considers the following factors:

1. The new clear width requirement would require wider entrance doors that may have a different price than doors compliant with the NBC 2020.
2. The wider entrance doors would reduce the amount of exterior wall that needs to be constructed.

#### 1. Cost Increase of Wider Entrance Doors

Tables 1 to 3 present regional retail cost comparisons of entrance doors that comply with NBC 2020 (810 mm) and entrance doors that comply with this proposed change (850 mm clear width  $\approx$  915 mm door width), for select door material types.

Table 1. Exterior Door Width and Cost Comparison: Fibreglass

Location	Cost of 810 mm Door <sup>(1)(2)</sup>	Cost of 915 mm Door <sup>(1)(2)</sup>	Max. Difference <sup>(3)</sup>
Saskatoon	\$759	\$759	–
Calgary	\$759	\$759	–
Nanaimo	\$759	\$759	–
Toronto	\$759	\$759	–
Moncton	\$766	\$767	\$1
Montréal	\$766	\$767	\$1
Halifax	\$766	\$767	\$1
Winnipeg	\$759	\$759	–

#### Notes to Table 1

(1) Source of price information for Saskatoon, Calgary and Nanaimo:

<https://www.homedepot.ca/product/masonite-36-inch-x-80-inch-craftsman-6-lite-primed-fibreglass-smooth-prehung-front-door/1000784545>

(2) Source of price information for Toronto, Moncton, Montréal, Halifax and Winnipeg:

<https://www.homedepot.ca/product/masonite-32-inch-x-80-inch-craftsman-6-lite-primed-fibreglass-smooth-prehung-front-door/1000784539>

(3) For the selected fibreglass options, only a few locations priced the wider selection \$1 higher, which is insignificant.

Table 2. Exterior Door Width and Cost Comparison: Steel

Location	Cost of 810 mm Door <sup>(1)</sup>	Cost of 915 mm Door <sup>(1)</sup>	Max. Difference <sup>(2)</sup>
Saskatoon	\$698	\$798	\$100
Calgary	\$698	\$798	\$100
Nanaimo	\$698	\$798	\$100
Toronto	\$698	\$798	\$100
Moncton	\$698	\$798	\$100
Montréal	\$698	\$798	\$100
Halifax	\$698	\$798	\$100
Winnipeg	\$698	\$798	\$100

#### Notes to Table 2

(1) Source of price information: <https://www.homedepot.ca/product/masonite-36-inch-x-80-inch-x-4-9-16-inch-full-lite-clear-single-primed-steel-prehung-front-door-rh/1001057069?rrec=true>

(2) For the selected steel options, the wider door was consistently retail priced \$100 more.

Table 3. Exterior Door Width and Cost Comparison: Wood

Location	Cost of 810 mm Door <sup>(1)(2)</sup>	Cost of 915 mm Door <sup>(1)(2)</sup>	Max. Difference <sup>(3)</sup>
Saskatoon	\$2,595	\$2,595	-
Calgary	\$2,595	\$2,595	-
Nanaimo	\$2,595	\$2,595	-
Toronto	\$2,595	\$2,595	-
Moncton	\$2,595	\$2,595	-
Montréal	\$2,595	\$2,595	-
Halifax	\$2,595	\$2,595	-
Winnipeg	\$2,595	\$2,595	-

Notes to Table 3

(1) Source of price information for Saskatoon, Nanaimo, Moncton, Halifax and Winnipeg: <https://www.homedepot.ca/product/krosswood-doors-36-in-x-80-in-right-hand-modern-hemlock-black-stain-solid-wood-single-prehung-front-door/1001749971>

(2) Source of price information for Calgary, Toronto and Montréal: <https://www.homedepot.ca/product/krosswood-doors-32-in-x-80-in-right-hand-modern-hemlock-black-stain-solid-wood-single-prehung-front-door/1001751924>

(3) For the selected wood options, the retail price was unchanged between the two door widths.

Given the information in Tables 1 to 3, a \$100 difference will be assumed between the entrance doors that comply with the NBC 2020 and those that comply with this proposed change because this represents the worst-case scenario, even though Tables 1 to 3 show that many of these products do not vary in price for different width options.

## 2. Cost Decrease Related to Construction of Reduced Exterior Wall

Table 4 presents costing data (from RSMeans) per linear metre of typical exterior wall assembly, which is used to determine the cost savings from installing a wider doorway that reduces the amount of exterior wall to be built.

Table 4. Cost of Typical Exterior Wall per Linear Metre

Component	Quantity	Unit Cost	Total Cost, ≈ \$/m
11 mm OSB sheathing	2.44 m <sup>2</sup>	\$12.59/m <sup>2</sup>	30.70
38 × 140 mm @ 400 mm stud wall			
38 × 140 mm plates (2 top, 1 btm)	3.00 m	\$7.05/m	21.16
38 × 140 mm studs	6.10 m	\$6.17/m	37.63
Fibreglass batt insulation (R21)	2.21 m <sup>2</sup>	\$13.13/m <sup>2</sup>	28.99
12.7 mm gypsum wall board	2.44 m <sup>2</sup>	\$14.31/m <sup>2</sup>	34.92
Total			153.39

As shown in Table 4, the cost per linear metre of a typical exterior wall is \$153.39.

Cost decrease from constructing less exterior wall = (Typical exterior wall cost per linear metre) × (proposed change compliant door width – NBC 2020 compliant door width) = (153.39 \$/m) × (0.915 – 0.810) m

**Cost decrease from constructing less exterior wall = \$16.11**

### 3. Overall Cost

Cost of this proposed change = (cost increase of a wider entrance door) – (cost decrease from constructing less exterior wall) = (\$100.00) – (\$16.11)

Cost of this proposed change = \$83.89

Therefore, based on the regional retail costing data for entrance doors that comply with NBC 2020 and this proposed change, it is expected that this change could present an increase in cost of \$83.89 per applicable dwelling unit.

### Limitations of the Cost Analysis

1. To comply with the proposed change, a standard 915 mm door would need to be open to approximately 100 to 105 degrees, corresponding to approximately 15 cm to 20 cm of additional clearance relative to opening the same door to 90 degrees. This may affect the layout of certain types of entrances (along with other parts of the dwelling unit), particularly for townhouses with narrow entrances.
2. The proposed change may result in the need for greater production of 915 mm doors, at the possible expense of smaller doors. It is noted that the proposed change applies to a minimum of one entrance, meaning that smaller exterior doors could still be used for other entrances where included in the design of the dwelling unit.
3. Door costs are based on retail prices, but may be priced differently if procured at a large scale.

### **Benefit Impact**

Based on the NBC minimum width requirement of 810 mm for the entrance door of a dwelling unit, this requirement estimates the clear width of the doorway by subtracting 65 mm (i.e., 45 mm door thickness + 20 mm exterior door jamb stop width = 65 mm reduction of doorway width by obstruction). Table 5 compares the reported percentages of wheelchairs that would not be able to fit through doorways of NBC 2020-compliant entrance doors having a clear width of 745 mm, and those compliant with this proposed change having a clear width of 850 mm.

Table 5. Percentages of Wheelchairs that Cannot Be Accommodated by Various Clear Widths of Doorways and Impact of the Proposed Change

Wheelchairs not accommodated by listed clear width, %			Wheelchairs not accommodated by the NBC 2020 clear width, but accommodated by the proposed change in PCF 1883, %	
Source	745 mm (NBC 2020)	850 mm (PCF 1883)	Source	850 mm
Seeger et al., AUS	4.1	0.9	Seeger et al., AUS	77.8



UDI, Canada	2.9	0.0	UDI, Canada	100.0
DfT, UK	4.1	2.4	DfT, UK	42.5
IDEA Center, USA	5.1	1.0	IDEA Center, USA	80.1

According to the information in Table 5, this proposed change would allow 42.5% to 100% of wheelchairs to enter a dwelling unit of those that cannot currently pass through a minimum NBC 2020-compliant entrance door.

#### Limitations of the Benefit Analysis

While this proposed change addresses the width of an entrance door, it does not include any requirements for the threshold of the doorway, which could still present an obstacle for mobility devices, though there are some products available on the market that can help address this.

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## Enforcement implications

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The proposed change is expected to be enforceable using a combination of a measuring tape and visual inspection. Authorities having jurisdiction would need to become familiar with the proposed change. Suites in Part 3 buildings (including dwelling units) require entrance doors with a clear width of 850 mm (Clause 3.3.1.13.(1)(b)), and similar methods could be used to enforce the proposed change in houses and other types of dwelling units.

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## Who is affected

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Builders and designers would need to be aware of the proposed change and potentially modify the layout of the dwelling unit to accommodate the need for increased space by the affected door.

Occupants (including owners) may gain a larger entrance and avoid the need to increase the doorway width should their mobility needs change.

Regulators and authorities having jurisdiction would need to be aware of and enforce the proposed change.

Door manufacturers and distributors might need to plan for changes to the production of exterior doors that comply with the proposed change.

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## OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

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- [3.8.1.1.1] 3.8.1.1. ([1] 1) no attributions
- [3.8.1.1.1] 3.8.1.1. ([2] 2) no attributions
- [3.8.2.1.1] 3.8.2.1. ([1] 1) no attributions
- [3.8.2.2.1] 3.8.2.2. ([1] 1) [F73-OA1]
- [3.8.2.2.1] 3.8.2.2. ([2] 2) no attributions
- [3.8.2.2.1] 3.8.2.2. ([3] 3) no attributions
- [3.8.2.2.1] 3.8.2.2. ([4] 4) [F73-OA1]
- [3.8.2.3.1] 3.8.2.3. ([1] 1) [F73-OA1]
- [3.8.2.3.1] 3.8.2.3. ([2] 2) no attributions
- [3.8.2.3.1] 3.8.2.3. ([3] 3) [F74-OA2]
- [3.8.2.3.1] 3.8.2.3. ([4] 4) [F74-OA2]
- [3.8.2.3.1] 3.8.2.3. ([5] 5) [F74-OA2]
- [3.8.2.3.1] 3.8.2.3. ([5] 5) [F10-OS3.7]
- [3.8.2.3.1] 3.8.2.3. ([6] 6) [F74-OA2]
- [3.8.2.4.1] 3.8.2.4. ([1] 1) [F73-OA1]
- [3.8.2.4.1] 3.8.2.4. ([2] 2) [F73-OA1]
- [3.8.2.5.1] 3.8.2.5. ([1] 1) [F73-OA1]
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- [3.8.2.7.1] 3.8.2.7. ([1] 1) [F73-OA1]
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- [3.8.2.7.1] 3.8.2.7. ([3] 3) no attributions
- [3.8.2.8.1] 3.8.2.8. ([1] 1) [F74-OA2]
- [3.8.2.8.1] 3.8.2.8. ([1] 1) [F72-OH2.1] [F71-OH2.3]
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[3.8.3.2.] 3.8.3.2. ([3] 3) ([c] c),([d] d) [F73-OA1]  
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[3.8.3.6.] 3.8.3.6. ([1] 1) no attributions

[3.8.3.6.] 3.8.3.6. ([2] 2) [F73-OA1]  
[3.8.3.6.] 3.8.3.6. ([3] 3) [F74-OA2]  
[3.8.3.6.] 3.8.3.6. ([3] 3) [F30-OS3.1]  
[3.8.3.6.] 3.8.3.6. ([4] 4) [F74-OA2]  
[3.8.3.6.] 3.8.3.6. ([4] 4) [F10-OS3.7]  
[3.8.3.6.] 3.8.3.6. ([5] 5) [F74-OA2]  
[3.8.3.6.] 3.8.3.6. ([5] 5) [F10-OS3.7]  
[3.8.3.6.] 3.8.3.6. ([6] 6) [F73-OA1]  
[3.8.3.6.] 3.8.3.6. ([7] 7) [F30-OS3.1]  
[3.8.3.6.] 3.8.3.6. ([8] 8) [F73-OA1]  
[3.8.3.6.] 3.8.3.6. ([9] 9) no attributions  
[3.8.3.6.] 3.8.3.6. ([10] 10) [F30-OS3.1]  
[3.8.3.6.] 3.8.3.6. ([10] 10) [F73-OA1]  
[3.8.3.6.] 3.8.3.6. ([10] 10) no attributions  
[3.8.3.6.] 3.8.3.6. ([11] 11) [F73-OA1]  
[3.8.3.6.] 3.8.3.6. ([12] 12) [F30-OS3.1]  
[3.8.3.6.] 3.8.3.6. ([12] 12) [F73-OA1]  
[3.8.3.6.] 3.8.3.6. ([13] 13) no attributions  
[3.8.3.6.] 3.8.3.6. ([14] 14) [F73-OA1]  
[3.8.3.6.] 3.8.3.6. ([15] 15) [F73-OA1]  
[3.8.3.6.] 3.8.3.6. ([16] 16) no attributions  
[3.8.3.6.] 3.8.3.6. ([17] 17) [F74-OA2]  
[3.8.3.6.] 3.8.3.6. ([17] 17) [F10-OS3.7]  
[3.8.3.7.] 3.8.3.7. ([1] 1) [F73-OA1]  
[3.8.3.7.] 3.8.3.7. ([1] 1) [F74-OA2]  
[3.8.3.7.] 3.8.3.7. ([1] 1) [F30-OS3.1] [F10-OS3.7]  
[3.8.3.8.] 3.8.3.8. ([1] 1) [F74-OA2]  
[3.8.3.8.] 3.8.3.8. ([1] 1) [F10-OS3.7]  
[3.8.3.9.] 3.8.3.9. ([1] 1) no attributions  
[3.8.3.9.] 3.8.3.9. ([1] 1) [F74-OA2]  
[3.8.3.9.] 3.8.3.9. ([1] 1) [F73-OA1]

- [3.8.3.9.] 3.8.3.9. ([2] 2) [F74-OA2]
- [3.8.3.9.] 3.8.3.9. ([2] 2) [F73-OA1]
- [3.8.3.9.] 3.8.3.9. ([3] 3) [F74-OA2]
- [3.8.3.9.] 3.8.3.9. ([3] 3) [F73-OA1]
- [3.8.3.10.] 3.8.3.10. ([1] 1) [F74-OA2]
- [3.8.3.10.] 3.8.3.10. ([2] 2) [F74-OA2]
- [3.8.3.11.] 3.8.3.11. ([1] 1) [F74-OA2]
- [3.8.3.11.] 3.8.3.11. ([2] 2) [F74-OA2]
- [3.8.3.12.] 3.8.3.12. ([1] 1) [F74-OA2]
- [3.8.3.12.] 3.8.3.12. ([1] 1) [F72-OH2.1]
- [3.8.3.12.] 3.8.3.12. ([1] 1) ([d] d)([i] i) [F74-OA2]
- [3.8.3.12.] 3.8.3.12. ([1] 1) ([f] f),(g) g [F30,F20-OS3.1]
- [3.8.3.12.] 3.8.3.12. ([1] 1) ([f] f) and (g) g
- [3.8.3.12.] 3.8.3.12. ([1] 1) ([h] h) [F30-OS3.1]
- [3.8.3.12.] 3.8.3.12. ([1] 1) no attributions
- [3.8.3.13.] 3.8.3.13. ([1] 1) [F74-OA2]
- [3.8.3.13.] 3.8.3.13. ([1] 1) ([b] b) [F10-OS3.7]
- [3.8.3.13.] 3.8.3.13. ([1] 1) ([c] c)
- [3.8.3.13.] 3.8.3.13. ([1] 1) ([d] d)
- [3.8.3.13.] 3.8.3.13. ([1] 1) ([f] f)
- [3.8.3.13.] 3.8.3.13. ([1] 1) ([g] g) [F30-OS3.1]
- [3.8.3.13.] 3.8.3.13. ([1] 1) ([i] i) [F74-OA2]
- [3.8.3.13.] 3.8.3.13. ([1] 1) [F72-OH2.1] [F71-OH2.3]
- [3.8.3.13.] 3.8.3.13. ([1] 1) ([b] b) [F74-OA2]
- [3.8.3.13.] 3.8.3.13. ([2] 2) [F72-OH2.1] [F71-OH2.3]
- [3.8.3.14.] 3.8.3.14. ([1] 1) [F74-OA2]
- [3.8.3.14.] 3.8.3.14. ([1] 1) [F72-OH2.1]
- [3.8.3.15.] 3.8.3.15. ([1] 1) [F74-OA2]
- [3.8.3.15.] 3.8.3.15. ([1] 1) ([d] d) [F30-OS3.1]
- [3.8.3.15.] 3.8.3.15. ([1] 1) ([a] a)
- [3.8.3.15.] 3.8.3.15. ([2] 2) [F74-OA2]

- [\[3.8.3.15.\]](#) 3.8.3.15. ([\[2\]](#) 2) ([\[f\]](#) f) [F30-OS3.1]
- [\[3.8.3.15.\]](#) 3.8.3.15. ([\[2\]](#) 2) ([\[c\]](#) c)
- [\[3.8.3.16.\]](#) 3.8.3.16. ([\[1\]](#) 1) [F74-OA2]
- [\[3.8.3.16.\]](#) 3.8.3.16. ([\[1\]](#) 1) [F71-OH2.3]
- [\[3.8.3.16.\]](#) 3.8.3.16. ([\[1\]](#) 1) ([\[f\]](#) f) [F31-OS3.2]
- [\[3.8.3.16.\]](#) 3.8.3.16. ([\[2\]](#) 2) [F74-OA2]
- [\[3.8.3.17.\]](#) 3.8.3.17. ([\[1\]](#) 1) [F74-OA2]
- [\[3.8.3.17.\]](#) 3.8.3.17. ([\[1\]](#) 1) ([\[d\]](#) d),([\[e\]](#) e) [F30-OS3.1]
- [\[3.8.3.17.\]](#) 3.8.3.17. ([\[1\]](#) 1) ([\[f\]](#) f) [F30-OS3.1]
- [\[3.8.3.17.\]](#) 3.8.3.17. ([\[1\]](#) 1) ([\[h\]](#) h) [F31-OS3.2]
- [\[3.8.3.17.\]](#) 3.8.3.17. ([\[2\]](#) 2) [F74-OA2]
- [\[3.8.3.17.\]](#) 3.8.3.17. ([\[2\]](#) 2) [F71-OH2.3]
- [\[3.8.3.17.\]](#) 3.8.3.17. ([\[2\]](#) 2) ([\[a\]](#) a) [F73-OA1]
- [\[3.8.3.17.\]](#) 3.8.3.17. ([\[2\]](#) 2) ([\[b\]](#) b) [F10-OS3.7]
- [\[3.8.3.17.\]](#) 3.8.3.17. ([\[2\]](#) 2) ([\[b\]](#) b) [F74-OA2]
- [\[3.8.3.17.\]](#) 3.8.3.17. ([\[2\]](#) 2) ([\[g\]](#) g) [F74-OA2]
- [\[3.8.3.18.\]](#) 3.8.3.18. ([\[1\]](#) 1) [F74-OA2]
- [\[3.8.3.19.\]](#) 3.8.3.19. ([\[1\]](#) 1) [F74-OA2]
- [\[3.8.3.19.\]](#) 3.8.3.19. ([\[1\]](#) 1) [F11-OS3.7]
- [\[3.8.3.19.\]](#) 3.8.3.19. ([\[2\]](#) 2) [F74-OA2]
- [\[3.8.3.20.\]](#) 3.8.3.20. ([\[1\]](#) 1) [F74-OA2]
- [\[3.8.3.21.\]](#) 3.8.3.21. ([\[1\]](#) 1) [F74-OA2]
- [\[3.8.3.21.\]](#) 3.8.3.21. ([\[2\]](#) 2) [F74-OA2]
- [\[3.8.3.22.\]](#) 3.8.3.22. ([\[1\]](#) 1) [F74-OA2]
- [\[3.8.3.22.\]](#) 3.8.3.22. ([\[1\]](#) 1) [F30-OS3.1]
- [\[3.8.3.22.\]](#) 3.8.3.22. ([\[1\]](#) 1) ([\[d\]](#) d) [F10-OS3.7]
- [\[3.8.3.22.\]](#) 3.8.3.22. ([\[2\]](#) 2) [F74-OA2]
- [\[3.8.3.22.\]](#) 3.8.3.22. ([\[2\]](#) 2) [F30-OS3.1]
- [\[3.8.3.22.\]](#) 3.8.3.22. ([\[3\]](#) 3) ([\[a\]](#) a) [F10-OS3.7]
- [\[3.8.3.22.\]](#) 3.8.3.22. ([\[3\]](#) 3) [F74-OA2]
- [\[3.8.3.22.\]](#) 3.8.3.22. ([\[4\]](#) 4) [F10-OS3.7]

[3.8.4.1.] -- ([1] --) [F73-OA1]