



الجمعيّة العلميّة الملكيّة
Royal Scientific Society

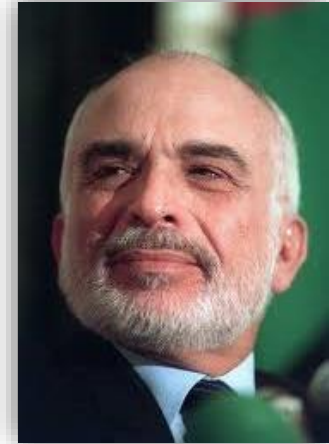
Jordan National Building Codes

Energy Codes and Manuals

21.01.2020

THE BEGINNINGS

The development process of Jordan's national building codes goes back to 1980 when the Jordanian National Building Council (JNBC) was formed by the Prime Minister when His Majesty late King Al-Hussein's put orders to look at preparing Building Codes and National Building Law to insure the safety of buildings.



An agreement was then signed between the Council and the Royal Scientific Society (RSS) whereby the Construction and Sustainable Buildings Center (CSBC) of the Society prepares volumes of the Jordan National Building Codes.

Today, National building codes and guidelines are prepared and updated in accordance with the agreement signed between the Ministry of Public Works and Housing and the Royal Scientific Society through the Building Codes Division of the Construction and Sustainable Buildings Center.



Building Codes ... Preparing and Updating

First Stage

- National Priorities
- Feedback from the application
- Updating other related codes
- The issuance of new technical specifications
- New techniques and technologies

Second Stage

- Forming a committee of preparation
- Identifying sources and references
- Defining the schedule and table of contents,
- Preparing the initial draft
- Forming a specialized review committee
- Finalization of the final draft

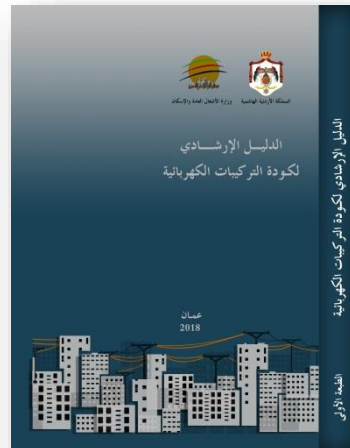
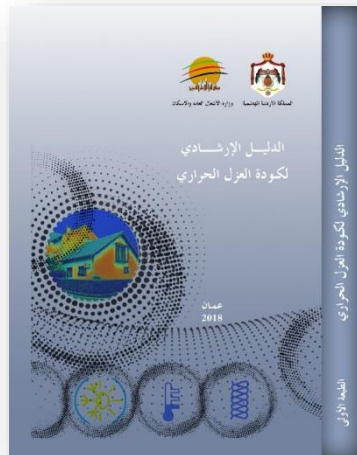
Third Stage

- Approval of the Technical Committee
- Approval of the Jordanian National Building Council,
- Presenting the draft for public for 60 days in libraries.
- Cabinet approval,
- Printing hard copies of the new edition,
- Application started



Building Codes ... Development

RSS and the JNBC have started the process of preparing and issuing manuals for the national building codes to clarify the concepts contained in the codes and to facilitate the application.

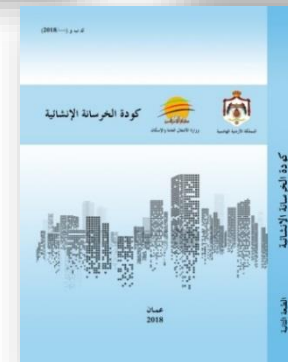
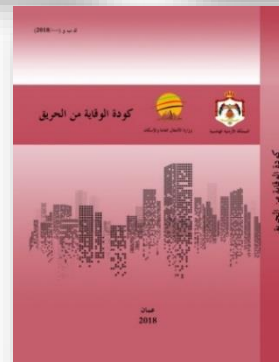
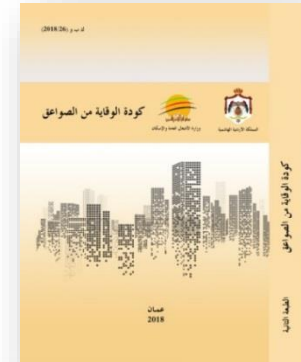
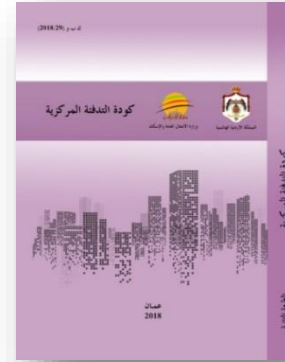


Building Codes ... Development

Old Edition



New Edition



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Jordan National Building Codes— 21/01/2020

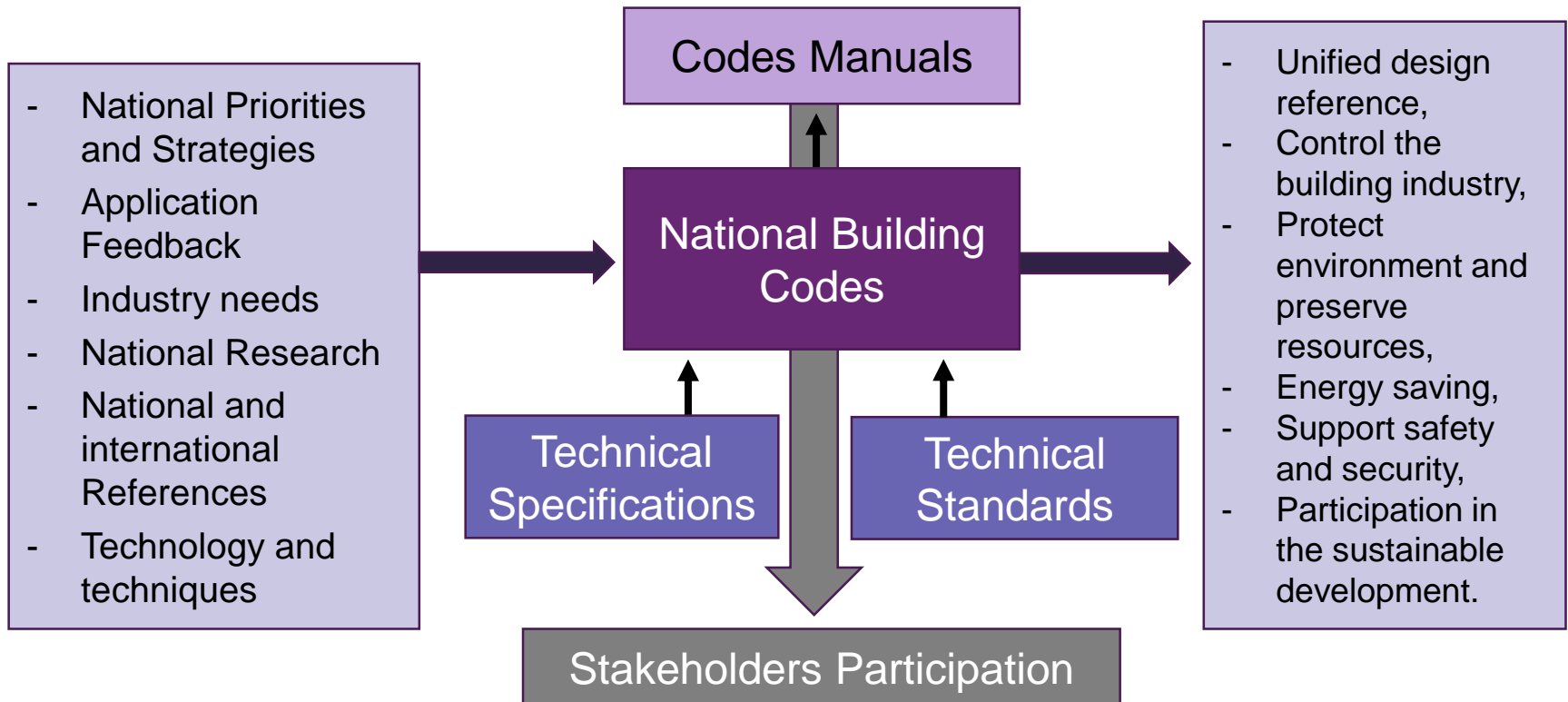
www.rss.jo

Building Codes ... Achievements

Natural Lighting **Site Investigation** **Loads and Forces** **Fire Protection**
Electrical Wiring and Installation **Shelters** **Thermal Insulation** **Steel structures**
Bases, Foundations and Retaining Walls **Refuse Disposal** **Building Materials**
Building Requirements for the Disabled **CCTV** **Uniform Plumbing** **Lifts** **Structural Concrete**
Prestressed Concrete **Solar Energy** **Steel Structures** **Scaffolding**
Formwork **Traffic Studies** **Gas Network for Buildings** **Acoustics For the Buildings**
Space Requirements in Buildings **Natural Ventilation** **Lightning Protection**
Urban Aesthetics **Masonry and Walls** **Environmental Impact assessment for Roads Projects**
Earthquake Resisting Structure **Mechanical Ventilation and Air Conditioning**
Fire fighting systems **Basic requirements for storage of hazardous materials** **Energy Saving Buildings**
Internal Lighting **Central Heating** **Concrete Water Tanks**



Building Codes ... Compatibility





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Energy Codes and Manuals

Energy Codes and Manuals

Until Jan 2020

The following Codes and Manuals have been prepared to cover the technical requirements for energy in the construction sector in Jordan:

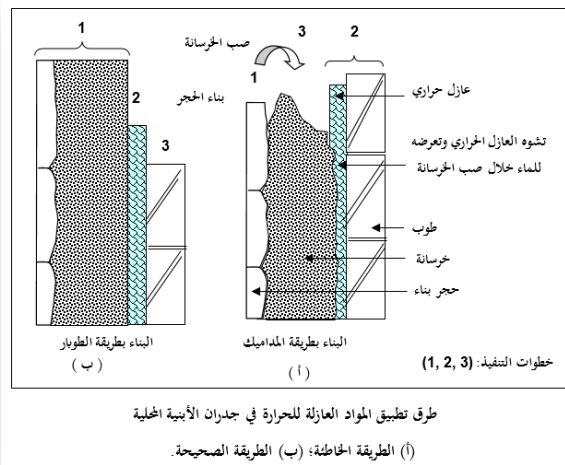
- Thermal Insulation Code and Manual
- Jordan Green Building Guide
- Natural Lighting Code
- Natural Ventilation Code
- Interior Illumination Code
- Energy Efficient Buildings Code and Manual
- Solar Energy Code and Manual
- Central Heating Code and manual
- Mechanical Ventilation and Air Conditioning Code and manual
- Code for Gas Piping in Buildings



Thermal Insulation Code

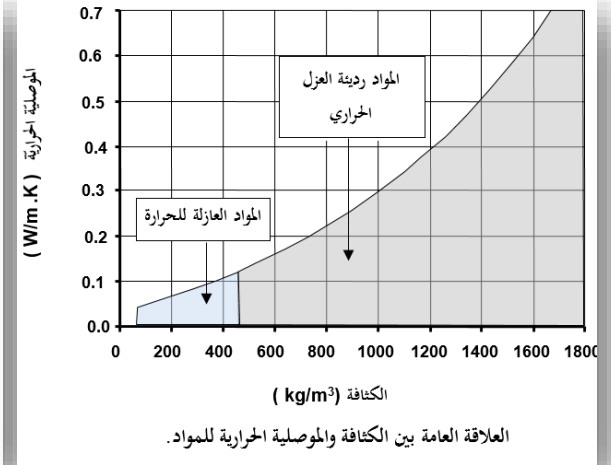
Second Edition, 2009

The code aims to define the building thermal design principles, and the methods for calculating the thermal characteristics of different structural elements. Additionally, set the minimum thermal requirements for these elements to facilitate the best selection by the engineers to achieve thermal comfort in buildings.



الجدول (أ-1): الموصلية الحرارية (k) للمواد الإنشائية والعازلة للحرارة بدلالة كثافتها.

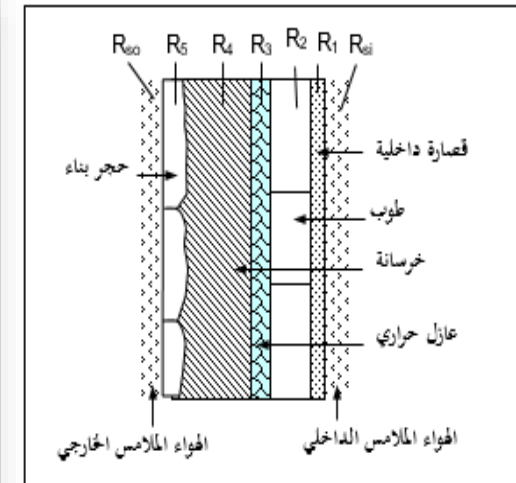
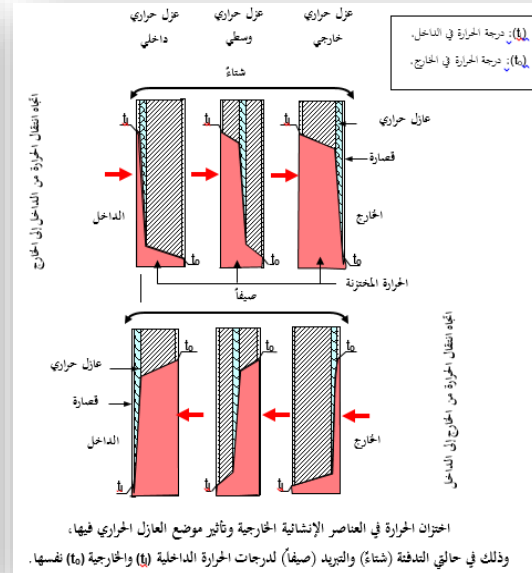
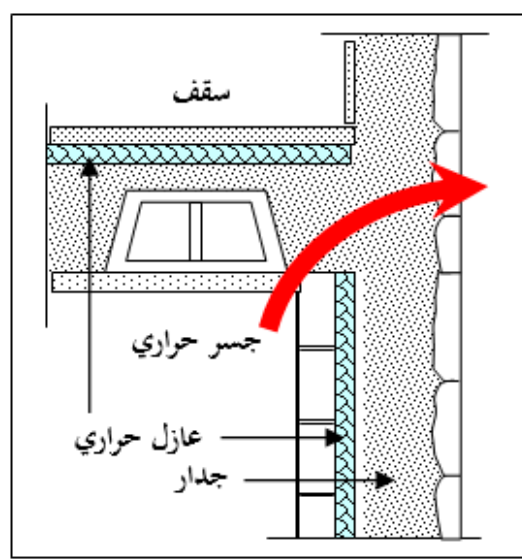
الموصلية الحرارية (k) (W/m.K)	الكثافة (p) (kg/m ³)	المادة	نوع المادة
2.2	2500	حجر جيري (Limestone)	حجارة طبيعية
1.75	2300	حجر رملي (Sandstone)	حجارة طبيعية
1.53	2200	رخام (Marble)	حجارة طبيعية
0.9	1650	جرانيت (Granite)	حجارة طبيعية
1.50	2300	بازلت (Basalt)	حجارة طبيعية
1.30	2000	رمل (Sand)	حجارة طبيعية
2.20	2500	رمل سيل (Wadi Sand) (20-100 mesh)	حجارة طبيعية
2.30	2600	حصى سيل (Wadi Pebbles) (3-6 mm)	حجارة طبيعية
2.30	2600	حصى سيل (Wadi Gravel) (10-19 mm)	حجارة طبيعية
0.30	1500	دولوميت (Dolomite)	كمام باغم وغشور
0.42	1750	لاية (صهارة بركانية) (Lava)	كمام باغم وغشور
0.42	1540	خفاف (Pumice)	كمام باغم وغشور
0.30	1250		كمام باغم وغشور
1.73	2600		كمام باغم وغشور
0.85	-		كمام باغم وغشور
0.09	480		كمام باغم وغشور



Thermal Insulation Manual

First Edition, 2018

This manual defines the thermal insulation materials, the basis for their selection, and practical applications, using appropriate methods for building insulation in accordance with the requirements of the code. It also shows the problems of condensation of water vapor.



جدار بناء محلي متعدد الطبقات متجانس التركيب.



Jordan Green Building Guide

The Green Building Guideline and rating system for Jordan is Referenced to Jordan's Building Codes (as compulsory requirements), and International green rating systems such as LEED from the United states, BREEAM from the united kingdom, ESTIDAMA from Abu Dhabi , Dubai green building rating system, QSAS from Qatar, and many more.

The Green building guideline contains parameters and credits that are suitable for Jordan's climate, resources, legislation, policies & policies instrument, building techniques and strategies. This Guideline is attached to a Voluntary rating system that is connected to an incentive scheme given by the government.



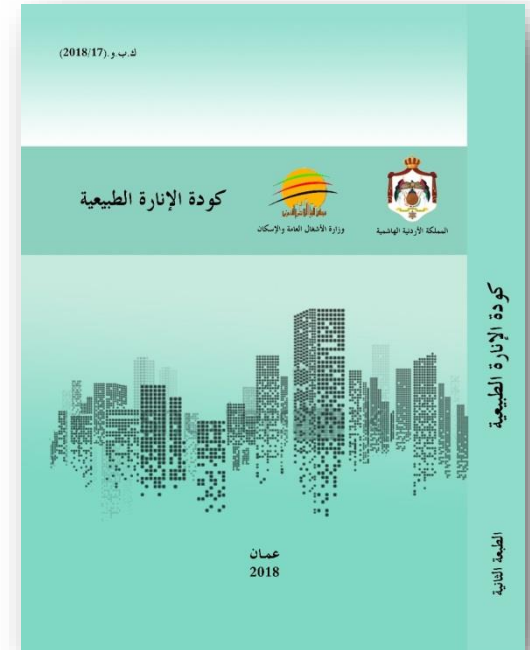
Natural Lighting Code

Second Edition, 2018

This code objective is to give data for specialists and engineers and designers about the importance of daylight in design, methods for calculations, methods for control, and energy saving from using natural light instead of artificial electric lighting with regards to the energy efficient building code.

All requirements mentioned in this code are applied to:

- new public and private buildings,
- existing buildings modification,
- existing building extension.

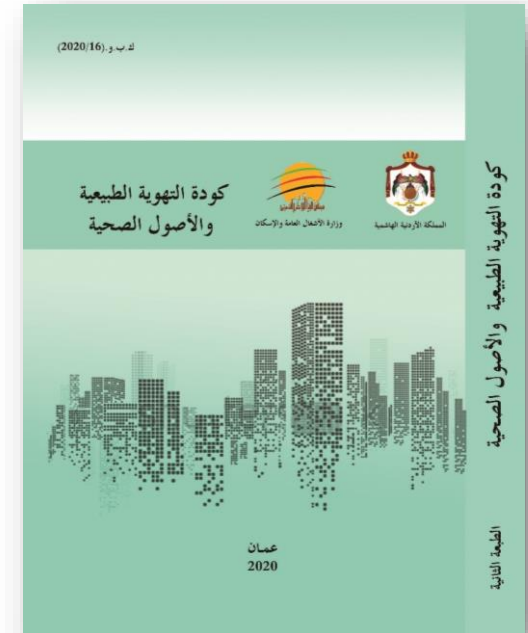


Natural Ventilation Code

Second Edition, 2020

The code objective is to provide buildings with air flow, without air currents, with capability of control, by utilizing outside wind, temperature differences between inside and outside the building, external openings design, and the building spaces.

New buildings, extensions on existing buildings, and adjustments to existing buildings (without energy consumption increase), are required to apply the requirements.



Energy Efficient Buildings Code, and Manual

Under updating

The code aims to provide minimum requirements for energy efficiency in buildings excluding the low-rise residential buildings (two floors or less), in the design, construction, operation and maintenance phase of the building.

The draft contains seven sections dealing with the most important information the engineer needs to carry out the design, implementation and operation of buildings in accordance with the requirements of the minimum energy efficiency.

The requirements in this draft apply on the following:

- (A) New public, private, and multi-purpose buildings and their systems.
- (B) New parts of public, private and multi-purpose buildings and their systems.
- (C) New systems and devices in all existing buildings.
- (D) New systems and devices used in manufacturing and industrial processes.

This code also includes a mechanism to verify the application of the code requirements.



Solar Energy Code, and Manual

Under updating

The purpose of this code is to indicate the minimum requirements that have to be met in solar energy systems, whether they are solar photovoltaic systems or solar thermal systems, in order to ensure the protection of public health and safety and the public good.

This draft also indicates the specific specifications for the type of materials and their quality, which must be referred to when designing the components of these systems.

The requirements and conditions in this draft are applied to the construction, installation, modification, restoration, relocation, replacement, addition, use, and maintenance of solar thermal systems and solar PV systems.

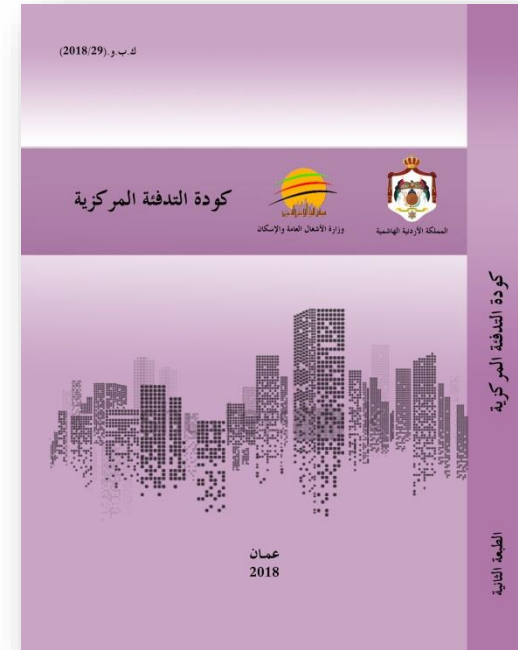


Central Heating Code

Second Edition, 2018

This code aims to provide the minimum requirements for comfort, public health and safety, and to achieve ways to reduce energy consumption and its means, by organizing design, construction, installation, quality of materials, location, operation, maintenance and control in central heating systems in hot water.

The code includes everything related to the design, implementation and operation of central heating systems that use hot water, and the use of devices and equipment such as section radiators and underfloor heating systems.

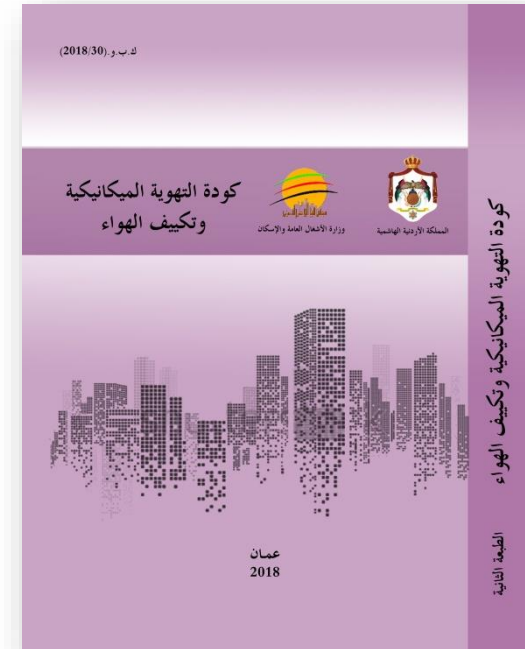


Mechanical Ventilation and Air Conditioning Code

Second Edition, 2018

This code aims to provide the minimum requirements for comfort, health, general safety and security resulting from mechanical ventilation systems and air conditioning for space while achieving energy saving and environmental conservation, through organize and control of design, planning, installation, quality of materials used, examination, operation, maintenance and safety of mechanical ventilation and air conditioning systems.

It includes the most important information needed to carry out the work of designing mechanical ventilation and air conditioning systems for buildings and facilities, implementing, installing, testing and operating them.





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Thank you

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