

<p style="text-align: center;"><b>Temporary Law Concerning the Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled Resources</b></p>
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**Chapter 1. General rules**

**Article 1. Objective**

The purpose of this Law is to promote rational and appropriate use of resources and energy corresponding to the new economic environment and to contribute to sound development of the nation's economy through taking measures necessary for promoting business activities concerning rational use of energy and specific substances as well as utilization of recycled resources by business operators in view of recent changes in resources and energy in this country, in the environmental conservation situation, and in other economic situations surrounding Japan.

**Article 2. Definitions**

1. For the purpose of the Law, "rationalization of energy use" means the rationalization of energy use (including utilization of oil-substitutive energy specified in Article 2 of the Law Concerning Promotion of Development and Introduction of Oil-substitutive Energy Law No. 71 of 1980) defined in sub-clause 1 of Article 2 of the Law Concerning Rationalization of Energy Use (Law No. 49 of 1979).
2. For the purpose of the Law, the "Specific Substance" means the following substances:
  - 1) Specific substances defined in clause 1 of Article 2 of the Law Concerning Protection of the Ozone Layer through the Restrictions of Specific Substances (Law No. 53 of 1988)
  - 2) Packaging materials or containers
3. For the purpose of the Law, "Recycled Resources" means the recycled resources defined in clause 1 of Article 2 of the Law Concerning Promotion of Recycled Resources Utilization (Law No. 48 of 1991).
4. For the purpose of the Law, "Specific Business activities" means the activities listed below:
  - 1) Appropriate implementation of the items listed in the respective sub-clauses of Article 3 of the Law Concerning Rationalization of Energy Use through installation or improvement of equipment that contributes to rationalization of energy use implemented by business

- operators at their factories or operational sites which belong to the type of businesses defined in sub-clause 1 of Article 6 of the above Law; or execution of measures necessary for the rationalization of energy use at other applicable factories or operational sites
- 2) Appropriate implementation of measures defined in the provision of Article 13 of the Law Concerning Rational Use of Energy through use of building materials or installation or improvement of equipment that contributes to the rationalization of energy use, and which is done by a person who intends to construct a building (except for dwelling houses; this interpretation is applied to the rest of this Law); or implementation of measures necessary for the rationalization of energy use in relation to the said building
  - 3) Research and development for the products specified by the government ordinance in relation to the technology for manufacture of industrial products that contribute to the rationalization of energy use by business operators
  - 4) Research and development for the technologies specified by the government ordinance in relation to the technology for manufacture of industrial products that contribute to the rational use of the specific substances by business operators
  - 5) Installment or improvement of the equipment specified by the government ordinance in relation to the equipment that belongs to the types of industrial sectors specified by the government ordinance, and that contribute to the rational use of the recycled resources by business operators
  - 6) Segregated collection (i.e. segregated collection defined in clause 4 of Article 2 of the Law Concerning Promotion of Recycled Resources; this interpretation is applied to the rest of this Law) of the recyclable resources specified by the government ordinance so that the business operators who belong to the industrial sector specified by the government ordinance can perform such collection in order to promote their utilization; and development of the markets for the products produced by using the said recycled resources
  - 7) Research and development of the technologies specified by the government ordinance in relation to the technology for manufacture of industrial products or civil engineering that contribute to utilization of recycled resources by business operators
5. For the purpose of the Law, the "Specific Equipment" means the following equipment:
- 1) The heat supply facilities (including electric power generating equipment that is installed together with such a heat supply facility), defined in clause 4 of Article 2 of the Law for Heat Supply Businesses (Law No. 88 of 1972), which are specified by the ordinance of the Ministry of International Trade and Industry as the facilities which particularly contribute to the rationalization of energy use
  - 2) The equipment defined by the government ordinance in relation to the equipment necessary

for the utilization of waste heat in cases where waste heat is generated at one factory or operational site (i.e. limited to factories or operational sites being used for the type of the industrial sectors specified by the government ordinance; this interpretation is applied to the rest of this sub-clause), then such waste heat is used at another factory or operational site; and that such waste heat is further reused at another factory or operational site other than the above mentioned factories or operational sites

- 3) Equipment specified by the government ordinance as the equipment which contributes to the rational use of specific substances
- 4) Equipment specified by government ordinance in connection with the manufacture of products using materials that are easy-to-recycle

6. For the purpose of this Law, "small- and medium-sized enterprises" means the following business entities:

- 1) The companies of which capital or invested amount is one hundred million yen or less, and companies or individuals who constantly have three hundred employees or less, all of which are mainly engaged in the industrial sectors of either manufacturing, mining, transportation or other sectors (except for the sectors described in the following sub-clause (2) and the business types specified by government ordinance No.3)
- 2) Companies having capital or invested amount of ten million yen or less, and companies or individuals who continually have fifty employees or less, all of which are mainly engaged in the retail businesses or service providing businesses (except for the companies and individuals specified by government ordinance as described in the next sub-clause (3)); and companies having capital or invested amount of thirty million yen or less, and companies or individuals who continually have one hundred employees or less, all of which are engaged mainly in the wholesale businesses (except for companies and individuals specified by government ordinance as described in the following sub-clause (3))
- 3) Companies having capital or invested amount less than the amount specified by the government ordinance for the respective type of businesses, and companies or individuals who continually have fewer employees than the number specified by the government ordinance for each business type, all of which are mainly engaged in the type of businesses defined by the said ordinance
- 4) Syndicates
- 5) Cooperative companies
- 6) Business cooperatives, cooperative federations, and other cooperative organizations or their federations, all of which are specified by government ordinance

7. For the purpose of the Law, "Cooperative" means a corporation described in the above sub-clause (6) or a corporate juridical person defined in Article 34 of the Civil Law Act (Law No. 89 of 1896), all of which directly or indirectly hold small- and medium-sized enterprises as the constituent members (hereinafter referred to as "Constituent Members") (restricted to corporations that satisfy the requirement specified by government ordinance)

### **Article 3. Public announcement on guidelines for business operators' efforts**

1. In consideration of the technical levels and other conditions of business operators or persons who intend to construct buildings (hereinafter referred to as the Business Operators), the competent minister shall establish and publicly announce autonomous guidelines for efforts (hereinafter referred to as the "Guidelines for Efforts") concerning the promotion of rational use of energy and specified substances as well as the utilization of recycled resources to be implemented by the Business Operators.
2. The competent minister shall, if it becomes necessary due to changes in the situation described in the above clause 1, revise such Guideline for Efforts).
3. The provision in the above sub-clause 1 also applies to the revision of Guidelines for Efforts described in the above sub-clause 2.
4. The competent minister shall consult with the Director General of the Environment Agency prior to establishment of a Guidance for Efforts or its revision.

## **Chapter 2. Promotion of Specific Business Activities by Business Operators**

### **Article 4. Authorization of business operation plan**

1. Business Operators who intend to implement Specific Business Activities can prepare a plan concerning the said Specific Business Activities (hereinafter referred to as the "Business Operation Plan"), and can submit it to the competent minister in order to be authorized as an appropriate Business Operation Plan.
2. Such a Business Operation Plan must contain the following items:
  - 1) The goal of the Specific Business Activities

- 2) The contents of the business activities and time of execution
  - 3) The amount of funds required for the Specific Business Activities and the method of fund raising
3. Upon receipt of application for authorization described in the above sub-clause 1, the competent minister shall authorize it, provided the said Business Operation Plan is recognized to satisfy each of the following items:
- 1) The items described in (1) and (2) of the above sub-clause 2 are proper in view of the guidelines for business operators' efforts, and are not a type to impede rational and adequate use of resources and energy for a new economic environment.
  - 2) The items described in (2) and (3) of the above clause 3 are appropriate for ensuring the Specific Business Operation activities.

#### **Article 5. Revision of Business Operation Plan**

1. The Business Operator who is authorized in accordance with clause 1 of Article 4 (hereinafter referred to as the "Authorized Business Operator") must be further authorized if the Business Operator intends to revise the Business Operation Plan which is related to the said authorization.
2. If the competent minister deems that an Authorized Business Operator is not performing the Specific Business Activities in conformity with the applicable authorized Business Operation Plan (the revised Business Operation Plan if a revision had been authorized based on the provision of the above clause 2, hereinafter referred to as the "Authorized Business Operation Plan"), the minister may cancel the said authorization.
3. The provision of the above clause 3 is also applied to the authorization described in the above clause 1.

#### **Article 6. Authorization of joint business plans**

1. Two or more Business Operators who intend to implement segregated collection of recyclable resources or other measures necessary for utilization of recycled resources or measures necessary for rational use of the specific substances described in sub-clause 2 (2) of Article 2, can jointly prepare a plan (hereinafter referred to as the "Joint Business Operation Plan") concerning the said measures (hereinafter referred to as the "Joint Business Activities") that

they intend to implement, and can submit it to the competent minister (the minister with regulatory authority over the industrial sector to which the business of the said Joint Business Operator belongs) in order to receive authorization of the said Joint Business Operation Plan as being appropriate.

2. Joint Business Operation Plans must contain the following items:
  - 1) The goal of the Joint Business Activities
  - 2) The contents of the Joint Business Activities and time of execution
  - 3) The amount of funds required for the Joint Business Activities and the method of fund raising
  
3. Upon receipt of an application for the authorization described in the above clause 1, the competent minister shall authorize the Joint Business Operation Plan, if it is recognized to satisfy the conditions listed below:
  - 1) The items described in sub-clauses (1) and (2) of the above clause 2 are appropriate in view of the Guidelines for Efforts, and are not a type of plan to impede the rational and proper use of resources which correspond to the new economic environment.
  - 2) The items described in sub-clauses (2) and (3) of the above clause 2 are necessary and appropriate in order to ensure achievement of the goal described in sub-clause 1 of the same clause.
  - 3) Fair competition between the Joint Business Operators concerning the said Joint Business Operation Plan and other business operators is to be maintained.
  - 4) The Plan is not a type to unreasonably harm the interests of general consumers as well as the relevant business operators.
  - 5) The Plan is not a type to unreasonably restrict new participants in the said Joint Business Operation Plan or withdrawal from it.

#### **Article 7. Revision of Joint Business Operation Plan and others**

1. When the Joint Business Operators who acquired the authorization stated in clause 1 of the above Article 1 (hereinafter referred to as the "Authorized Joint Business Operators") intend to revise the Joint Business Operation Plan with regard to the said authorization, the revised Business Operation Plan must be authorized by the competent minister.
  
2. When the Joint Business Operation Plan (or the revised Joint Business Operation Plan if a revision had been authorized based on the provision given in the above clause 1) authorized in

accordance with clause 1 of the above Article 6 is deemed no longer to comply with the standards specified in clause 3 of Article 6, the competent minister must instruct the Authorized Joint Business Operator to revise the said Authorized Joint Business Operation Plan, or must cancel the authorization.

3. The provision of clause 3 of the above Article 6 also applies to authorization described in the above clause 1.

#### **Article 8. Relationship with the Fair Trade Commission**

1. Prior to authorizing (including authorization of revision defined in clause 1 of the above Article 7; this interpretation is applied to the rest of this Article) based on clause 1 of Article 6, the competent minister for the applicable Business Operators, if necessary, shall submit a copy of the application for the said authorization to the Fair Trade Commission, and, at the same time, shall state his/her opinion to the Fair Trade Commission with regard to the items concerning the situation of competition in connection with the Joint Business Activities set forth in the said Joint Business Operation Plan, items regarding the influences that the said Joint Business Operation Plan may exert on the said competition, and other necessary items.
2. If the Fair Trade Commission deems it necessary, it shall express its opinion to the competent minister regarding the Joint Operation Business Plan submitted.
3. With regard to a deed that is made in compliance with the Joint Business Operation Plan, which is a plan submitted based on the provision of the above clause 1, and which has been authorized by the competent minister based on clause 1 of Article 6, if the Fair Trade Commission, after such an authorization, deems there to be an actual breach against the provisions of the Law Concerning Prohibition of Private Monopoly and Fair Trade (Law No. 54 of 1947), the Commission shall notify the competent minister of such breach.
4. When the competent minister receives the notification defined in the above clause 3, the minister may state his/her opinion to the Fair Trade Commission regarding the item described in the above clause 1 in consideration of the change in economic market which had arisen after the said authorization.
5. When the competent minister receives the notification defined in the above clause 3, the minister shall take a measure defined in clause 2 of Article 8 in connection with the said

Authorized Joint Business Operation Plan, provided the Authorized Joint Business Operation Plan relevant to the said notification falls within the case described in clause 2 of Article 7.

6. When the competent minister cancels the authorization of the Joint Business Operation Plan in relation to the submission defined in the above clause 1 in accordance with the provision of clause 2 of the above Article 7, the minister shall notify the Fair Trade Commission of such cancellation.

#### **Article 9. Support by the competent minister**

1. In order to ensure appropriate implementation of the Joint Business Activities defined in the Authorized Joint Business Operation Plans by the Authorized Joint Business Operators, the competent minister shall make efforts to provide the Authorized Joint Business Operators with necessary information, materials and other necessary assistance.
2. When the competent minister recognizes it is particularly necessary for the realization of smooth implementation of Joint Business Activities, which are set forth in the Operation in the Authorized Joint Business Plan by the Authorized Joint Business Operators, the minister may ask relevant persons or organizations to extend necessary cooperation.

#### **Article 10. Operation of Specific Business Activities promotion by the Industrial Foundation Improvement Fund**

The Industrial Foundation Improvement Fund (hereinafter referred to as the "Fund") shall conduct the activities listed below, in addition to the activities stipulated in sub-clause 1 (2) of Article 40 of the Temporary Law Concerning Promotion of Establishing Specific Facilities through Utilizing Capabilities of Private Business Operators (Law No. 77 of 1986, hereinafter referred to as the "Specific Facilities Establishment Law), in order to promote the Specific Business Activities by Business Operators (in the case of the Specific Business Activities described in sub-clause 4 (7) of Article 2, the Activities specified by the government ordinance are to be excluded; this interpretation is applied to sub-clauses 1 through 3 of the same Article and clause 2 of Article 18) and to install or improve specific equipment or facilities (in the case of the specific facilities described in sub-clause 5 (3) of Article 2, the specific facilities specified by the government ordinance are excluded; this interpretation is applied to the rest of this Chapter).

- 1) Provision of suretyship concerning loans for funds (in the case of funds with regard to the Specific Business Activities described in sub-clause 4 (1) of Article 2, they are limited to



the installation or improvement of equipment; and in case of the funds regarding the Specific Business Activities specified in sub-clause 4 (2) of the same Article, they are limited to the funds necessary for the use of building materials, or installation or improvement of equipment) necessary for the Specific Business Activities (except for the activities described in sub-clause 4 (6) of Article 2) that are to be implemented by the Authorized Business Operators in accordance with the Authorized Business Plan; and for the funds necessary for installation or improvement of the Specific Equipment that are to be made by Business Operators

- 2) Provision of grant-in-aid for paying interest to the Japan Development Bank or other institutions designated by the Minister of Finance or the Minister of International Trade and Industry (hereinafter in this sub-clause referred to as "the Japan Development Bank and Other Institutions") in connection with the funds necessary for the Specific Business Activities (restricted to the activities defined in sub-clauses (3), (4), (5), or (7) of clause 4 of Article 2) that are to be carried out in accordance with the Authorized Business Operation Plans by the Japan Development Bank and Other Institutions; and loans for the funds necessary for the installation or improvement of the Specific Equipment described in sub-clauses 5 (3) or 5 (4) of Article 2
- 3) Collection, compilation, and provision of information concerning Specific Business Activities, and installation or improvement of Specific Equipment
- 4) Implementation of activities which arise from the activities described in the above sub-clause 3

#### **Article 11. Investment by the government**

When the Fund increases its capital for the funds necessary for the activities described in clause 1 of the above Article 10 for the purpose of applying to the credit fund for rationalization of energy use defined in sub-clause 1 of Article 13, or to the credit fund for utilization of recycled resources specified in clause 1 of Article 16, the government may finance the Funds within the applicable budget. In this case, the government shall show the amount to be financed.

#### **Article 12. Special account for rational use of energy**

1. With regard to the accounting concerning the activities specified in clauses (1) and (2) of the above Article 10 (restricted to the activities concerning the Specific Business Activities specified in sub-clauses (1) through (3) of clause 4 of Article 2, or concerning installation or improvement of the Specific Equipment described in sub-clauses (1) and (2) of clause 5 of

Article 2; hereinafter referred to as the Activities for Rationalization of Energy Use) and other accompanying activities, the Fund must segregate such accounts from any other accounts, and shall formulate a special account and treat it separately (hereinafter referred to as the "Special Account for Rationalization of Energy Use").

2. If a profit is generated in the income statement for a fiscal year of the Special Account for Rationalization of Energy Use, the Fund shall apply such profit to cover all of or a part of the deficit carried forward. If there remains a surplus after application to the deficit carried forward, the amount of such surplus must be incorporated into the reserve.
3. If a loss arises in the income statement for a fiscal year of the Special Account for Rationalization of Energy Use, the Fund shall cover the amount of such loss by the reserve described in the above clause 2. If the amount of the said reserve is insufficient to cover the loss, the balance of the loss shall be treated as the deficit carried forward.

#### **Article 13. Credit fund for Rationalization of Energy Use**

1. In connection with the activities (restricted to activities for Rationalization of Energy Use) specified in clause 1 of Article 10, the Fund must formulate the Fund for Rationalization of Energy Use, which is to be financed by the government for this purpose in compliance with the provision of Article 11.
2. If a profit or loss arises in the income statement for a fiscal year of the Special Account for Rationalization of Energy Use, the amount of the Fund for Rationalization of Energy Use shall be increased or decreased in accordance with the amount of such profit or loss.

#### **Article 14. The Fund for Promotion of Rationalization of Energy Use**

1. The Fund shall establish the Fund for Promotion of Rationalization of Energy Use in relation to the activities specified in clause 2 of Article 10 (restricted to the activities for Rationalization of Energy Use) as well as their accompanying activities
2. With regard to the accounting related to the Fund for Rationalization of Energy Use, the Fund must segregate it from any other accounting of the Special Account for Rationalization of Energy Use.
3. Notwithstanding the provision of clause 2 of the above Article 13, the Fund shall apply a part

of the amount equivalent to the reserve described in clause 2 of Article 12 to the Fund for Promotion of Rationalization of Energy Use within the amount authorized by the Minister of Finance and the Minister of International Trade and Industry in advance.

4. Interest arising from use of the Fund for Promotion of Rationalization of Energy Use as well as other incomes generated as a result of investment or use of the said Fund shall be incorporated into the Fund for Promotion of Rationalization of Energy Use.

**Article 15. Special account for utilization of recycled resources**

1. With regard to the accounting related to the activities specified in clauses (1) and (2) of Article 10 (except for the activities for Rationalization of Energy Use) and their accompanying activities, the Fund must segregate it from any other accounts, and must establish a special account (hereinafter referred to as the "Special Account for Utilization of Recycled Resources") to incorporate it.
2. When a profit is generated in the income statement of the Special Account for Utilization of Recycled Resources for a fiscal year, the Fund shall apply such profit to the deficit carried forward from the previous fiscal year. If there is a surplus after such application, notwithstanding the provision of clause 1 of Article 47 in the Specific Facilities Establishment Law, all or a part of such surplus must be incorporated into the reserve in accordance with government ordinance.
3. If a loss arises in the income statement of the Special Account for Utilization of Recycled Resources for a fiscal year, it shall be covered by the reserve described in the above clause 2. If the amount of the reserve is insufficient to cover such a loss, it must be treated as a deficit to be carried forward.
4. When there is a surplus remaining even after being incorporated into the reserve in accordance with the above clause 2, the Fund must pay the amount of such surplus to the National Treasury.
5. In relation to the payment described in the above clause 4, the procedure and other necessary items shall be stipulated by a government ordinance.
6. Subject to authorization by the Minister of Finance and the Minister of International Trade and

Industry, the Fund may transfer a part of the Funds of the following accounts into the Special Account for Utilization of Recycled Resources in order to apply that part to the funds necessary for the activities specified in clause 1 of Article 10 (except for the activities for Rationalization of Energy Use), the activities described in clause 2 of the same Article (except for the activities for Rationalization of Energy Use), and their accompanying activities (hereinafter generically referred to as the "Activities for Utilization of Recycled Resources: the Special Account defined in clause 1 of Article 18 of the Temporary Law for Smooth Transformation of the Industrial Structure (Law No. 24 of 1987); the Special Account defined in clause 1 of Article 11 of the Special Law Concerning Promotion of Specific Commerce Integration (Law No. 82 of 1991); the Special Account defined in clause 1 of Article 10 of the Temporary Law Concerning Promotion of Imports and Smoothing Investment to Domestic Businesses (Law No. 22 of 1992); and generic accounts other than Account for Rationalization of Energy Use.

7. Subject to the authorization by the Minister of Finance and the Minister of International Trade and Industry, the Fund, to the extent that it does not affect the Activities for Utilization of Recycled Resources, may transfer a part of the Special Fund for Utilization of Recycled Resources into the general account up to the amount that was transferred in accordance with the provision of the above clause 6.

#### **Article 16. Credit Fund for Utilization of Recycled Resources**

1. With regard to the activities described in clause 10 of Article 10 (except for the activities for Rationalization of Energy Use), the Fund shall establish the Credit Fund for Utilization of Recycled Resources by applying the amount which was financed by the government to the Credit Fund for Utilization of Recycled Resources in compliance with the provision of Article 11.
2. When a profit or loss arises in the income statement of the Special Account for Utilization of Recycled Resources that is issued every fiscal year, the amount of the Credit Fund for Utilization of Recycled Resources shall be either increased or decreased in accordance with the amount of such profit (the amount after deducting the amount of the said surplus from the amount of the said profit if the said surplus is transferred to the National Treasury as defined in clause 4 of the above Article 15) or loss.

#### **Article 17. Fund for Promoting Utilization of Recycled Resources**

1. In relation to the activities specified in clause 2 of Article 10 (except for the activities for Rationalization of Energy Use) and their accompanying activities, the Fund shall establish the Fund for Promoting Utilization of Recycled Resources.
2. Regarding the accounting for the Fund for Promoting Utilization of Recycled Resources, the Fund must segregate the accounting for the Special Account for Utilization of Recycled Resources from all other accounting.
3. Notwithstanding the provision of clause 2 of the above Article 16, the Fund shall apply a part of the amount equivalent to the reserve defined in clause 2 of Article 16 to the Fund for Promoting Utilization of Recycled Resources up to the amount authorized in advance by the Minister of Finance and the Minister of International Trade and Industry.
4. Any interests generated from investment of the Fund for Promoting Utilization of Recycled Resources as well as incomes that arise following investment or use of the other said Fund shall be applied to a part of the Fund for Promoting Utilization of Recycled Resources.

#### **Article 18. Exceptional cases for Specific Facilities Establishment Law**

1. When activities of the Fund are implemented in compliance with the provisions of Article 10, "the Japan Development Bank" that appears in Article 19 of the Specific Facilities Establishment Law should be construed as "the government and the Japan Development Bank"; similarly, "the amount invested when the authorization stipulated in the provision of clause 2 of the same Article was given" that appears in clause 2 of Article 40 of the Specific Facilities Establishment Law should be construed as "the amount invested when the authorization stipulated in the provision of clause 2 of the same Article was given (except for the amount financed by the government in accordance with the provision of Article 11 of the Temporary Law Concerning the Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled Resources (hereinafter referred to as "the Specific Business Activities Promotion Law"))"; "the activities specified in sub-clause 1 of the previous clause" should be construed as "the activities specified in clause 1 of the previous clause and transfer to the special account defined in clause 1 of Article 15 based on clause 6 of the same Article in the Specific Business Activities Promotion Law (hereinafter referred to as the "Special Account for Utilization of Recycled Resources)"; "decision on suretyship obligation"

that appears in clause 1 of Article 41 of the Special Facilities Establishment Law should be construed as "decision on suretyship obligation as well as provision of interest subsidy"; "investors" appearing in Article 46 of the Special Facilities Establishment Law should be construed as "investors other than the government"; "this Law" that appears in Article 51 of the Special Facilities Establishment Law should be construed as "this Law as well as the Specific Business Activities Promotion Law"; "this Law" that appears in clause 2 of Article 52, and clauses 1 and 2 of the Special Facilities Establishment Law should be construed as "this Law or the Specific Business Activities Promotion Law"; "investors" that appears in clause 3 of Article 54 of the Specific Facilities Establishment Law should be construed as "investors other than the government"; "this....to respective investor" appearing in clause 1 of Article 55 of the Specific Facilities Establishment Law should be construed as "in accordance with the government ordinance, out of the remaining asset, the amount equivalent to that of the special account defined in clause 1 of Article 12 of the Specific Business Activities Promotion Law (hereinafter referred to as the "Special Account for Rationalization of Energy Use") as well as the amount equivalent to that of the Special Account for Utilization of Recycled Energy are to be .....to the government, while the amount equivalent to general accounts other than the Special Account for Rational Use of Energy and the Special Account for Utilization of Recycled Resources is to be .... to the respective investors who are related to the said account"; "respective investors" that appears in clause 2 of the same Article should be construed as "the respective investors in connection with generic accounts other than the Special Account for Rationalization of Energy Use and the Special Account for Utilization of Recycled Resources"; "clause 1 of Article 40" that appears in clause 3 of Article 63 of the Special Facilities Establishment Law should be construed as "clause 1 of Article 40 as well as Article 10 of the Specific Business Activities Promotion Law"; "activities specified in sub-clauses 3 and 5 of Article 16" that appears in clause 1 of Article 20 of the Temporary Law for Smooth Transformation of Industrial Structure should be construed as "the activities specified in sub-clauses 3 and 5 of Article 16 as well as the activities specified in clause 3 of Article 10 of the Temporary Law Concerning the Promotion of Activities for Rationalization of Energy Use and Utilization of Recycled Resources."

2. Prior to providing authorization in accordance with the provisions of clause 1 of Article 42 or Article 44 of the Specific Facilities Establishment Law, the Minister of Finance and the Minister of International Trade and Industry shall discuss with the competent minister (except for the Minister of Finance and the Minister of International Trade and Industry) with regard to the items concerning the activities described in sub-clauses (1) and (2) of Article 10 (limited to the activities related to the Specific Business Activities).

### **Article 19. Exceptional cases of taxation**

1. Within the Specific Business Activities specified in sub-clause 4 (1) of Article 2 that the Authorized Business Operators implement in conformity with the Authorized Business Operation Plan, a special tax exemption shall be applied to the activities specified in the Special Taxation Law (Law No. 26 of 1957) in accordance with the provisions of the said Law.
2. As for the Specific Business Activities described in sub-clauses 4 (3), (4), and (7) of Article 2 that the Authorized Business Operators implement in compliance with the Authorized Business Operation Plan, a special tax exemption shall be applied in accordance with the provisions of the Special Taxation Law.
3. When the Authorized Business Operators accumulate expenses required for the Specific Business Activities as the Reserve for Promotion of Utilization of Recycled Resources where the said Authorized Business Operators carry out the said Business Activities specified in sub-clause 4 (6) of Article 2 in compliance with the Authorized Business Operation Plan, a special tax exemption for the corporate taxes or income taxes to the applicable Authorized Business Operators shall be applied in accordance with the provisions of the Special Taxation Law.

### **Chapter 3. Promotion of the Specific Business Activities Implemented by Small- and Medium-sized Enterprises**

#### **Article 20. Authorization of Business Operation Plans**

1. Proprietors of Small- and Medium-sized Enterprises shall prepare their Business Operation Plans, while the Cooperatives shall prepare their Business Operation Plans or the Business Operation Plans of Small- and Medium-sized Enterprises which are their constituent members (limited to Cooperatives constituent members of which are mostly Small- and Medium-sized Enterprises that are mainly engaged in the types of business defined in the government ordinance described in sub-clauses 4 (5) and (6) of Article 2, in the case of the Business Operation Plan in relation to the Specific Business Activities stated in sub-clauses 4 (5) and (6) of Article 2). Then, after submitting such a plan to the Prefectural Governor who has competence over the main office of the applicant, the plan may be authorized as an appropriate Business Operation Plan.

2. The provisions of clauses 2 and 3 of Article 4 as well as Article 5 are applied to the authorization defined in the above clause 1 as well. In such case, the portion "the Business Operators (hereinafter referred to as "the Authorized Business Operators")" that appears in clause 1 of Article 4 should be construed as "the Small- and Medium-sized Enterprises (hereinafter referred to as "the Authorized Small- and Medium-sized Companies") or Cooperatives (hereinafter referred to as "the Authorized Cooperatives")"; "the Authorized Business Operators" that appears in clause 2 of Article 4 should be read as "the Authorized Small- and Medium-sized Enterprises and the Authorized Cooperatives"; and "the Authorized Business Plans" in the same clause should be read as "the Business Plans of the Small- and Medium-sized Enterprises."
3. If such a Cooperative intends to impose upon their constituent members the expenses to be spent for the purpose of tests and /or research in connection with the Specific Business Activities specified in sub-clauses 4 (3), (4) and (7) of Article 2, the standards for such imposition can be stated in its Business Operation Plan.

**Article 21. Exceptional cases in the Credit Insurance Law for small- and medium-sized enterprises**

1. With regard to the ordinary insurance defined in clause 1 of Article 3 of the Credit Insurance Law for Small- and Medium-sized Enterprises (Law No. 264 of 1950) (hereinafter referred to as the "Ordinary Insurance"), the Unsecured Insurance defined in clause 1 of Article 3.2 of the same Law (hereinafter referred to as the "Unsecured Insurance"), or the Special Small Amount Insurance defined in clause 1 of Article 3.3 of the same Law (hereinafter referred to as the "Special Small Amount Insurance"), the expressions, written in the middle column of the following chart, for each clause number shown in the left column shall be changed to the expressions shown in the right column, where they are concerned with the Small- and Medium-sized Enterprises that received the guaranty for the Specific Business Activities (i.e. the guaranty for the liabilities that are defined in clause 1 of Article 3.1, clause 1 of Article 3.2, or clause 1 of Article 3.3 of the same Law, and that are related to the fund necessary for the Authorized Small- and Medium-sized Enterprises, the Authorized Cooperatives, or the Small- or Medium-sized Enterprises that are the constituent members of such Cooperatives to carry out the Specific Business Activities specified in sub-clause 4 (5) or (6) of Article 2 in accordance with the Authorized Business Operation Plans of Small- and Medium-sized Enterprises, or that are related to funds necessary to install or improve the Specific Equipment



specified in sub-clause 5 (3) or (4) of Article 2 (limited to the Equipment defined by the government ordinance in the case of the Specific Equipment specified in sub-clause 3 of the same clause, which is applied to the rest of this Law.):

Clause 1, Article 3	The insured amount....	The total insurance amount in relation to the guaranty for the Specific Business Activities defined in clause 1 of Article 21 of the Temporary Law Concerning the Promotion of Activities for Rationalization in Use of Energy, etc. and Utilization of Recycled Resources (hereinafter referred to as "Specific Business Activities-related Guaranty") and the total amount of the other insurance are respectively....
Clause 1, Article 3.2, Clause 1, Article 3.3	The insured amount ....	The total amount of insurance concerning the Specific Business Activities-related Guaranty and the total amount of the other insurance are respectively ....
Clause 3, Article 3.2 Clause 2, Article 3.3	The said guaranty is made	The said guaranty is made respectively for the Specific Business Activities-related Guaranty and the other guaranty ....
	The said creditors	The said guaranty is respectively made for the Specific Business Activity-related Guaranty and other guaranty

2. In relation to application of the provision of clause 2 of Article 3 and Article 5 of the Credit Insurance Law for Small- and Medium-sized Enterprises regarding the Ordinary Insurance and the Specific Business Activities-related guaranty, it is indicated as "70/100" in clause 2 of Article 3 of the said Law; and "70/100 (80/100 in cases of Unsecured Insurance, Special Small Amount Insurance, Pollution Prevention Insurance, Energy Corresponding Insurance, Overseas Investment-related Insurance, and New Business Development Insurance)" that appears in Article 5 of the said Law shall be changed to "80/100."
3. When the provisions of clauses 1 and 2 of Article 3.5 of the Credit Insurance Law for Small- and Medium-sized Enterprises are applied in relation to the Small- and Medium-sized

Enterprises that are granted the Business Activities-related Guaranty for Rationalization of Energy Use (i.e. the guaranty for liabilities defined in the said Law, and the guaranty for the funds necessary for the Authorized Small- and Medium-sized Enterprises, the Authorized Cooperatives, or Small- and Medium-sized Enterprises that are the constituent members of such Cooperatives that carry out the Specific Business Activities described in sub-clause 4 (1) of Article 2), which are also related to the Energy Correspondent Insurance defined in clause 1 of Article 3.5 of the said Law, the portion "one hundred million yen" that appears in clause 1 of Article 3.5 of the said Law shall be changed to "the insurance amount concerning the guaranty for liability of the funds over four hundred million yen (i.e. the funds necessary for implementing the Specific Business Activities stated in sub-clause 4 (1) of Article 2 of the said Law in accordance with the Authorized Business Activities of Small- and Medium Enterprises defined in clause 2 of Article 5 of the said Law, which is changed pursuant to the provision of clause 2 of Article 20 of the Temporary Law Concerning Promotion of Activities for Rationalization in the Use of Energy as well as Utilization of Recycled Resources (hereinafter referred to as the "Fund for Rational Use of Energy") shall be one hundred million yen"; similarly, the portion "two hundred million yen" shall be changed to "eight hundred million yen (in the case of the insurance concerning guaranty for liability of funds other than the Fund for Rationalization of Energy Use is two hundred million yen)"; and "one hundred million yen" that appears in clause 2 of Article 2 shall be changed to "four hundred million yen (in the case of the insurance concerning guaranty for liability of funds other than the Fund for Rational Use of Energy is one hundred million yen)."

**Article 22. Exceptional cases in the Law for Subsidy of Small- and Medium-sized Enterprises Modernization Funds**

Notwithstanding the provision of Article 5 of the Law for Subsidy of Small- and Medium-sized Enterprise Modernization Funds (Law No. 115 of 1956), with regard to loans granted for the purpose of subsidizing modernization of Small- and Medium-sized Enterprises stipulated in clause 1 of Article 3 of the above Law, loans for equipment necessary for the Authorized Small- and Medium-sized Enterprises, the Authorized Cooperatives, and Small- and Medium-sized Enterprises that are the constituent members of such Cooperatives in order to carry out the Specific Business Activities specified in sub-clauses 4 (1), (5), and (6) of Article 2 in compliance with the Authorized Business Operation Plan of Small- and Medium-sized Enterprises, and loans necessary for installing the Specific Equipment described in sub-clause 5 (3) and (4) of Article 2, the maturity of the loans shall be seven years or shorter, which shall be specified by government ordinance.

**Article 23. Exceptional cases in the Law for the Small- and Medium-sized Enterprises Investment Promotion Stock Company**

1. In addition to the activities specified in the respective sub-clauses of clause 1 of Article 5 in the Law for Small- and Medium-sized Enterprises Investment Promotion Stock Company (Law No. 101 of 1963), the Small- and Medium Enterprises Investment Promotion Stock Company can underwrite new stocks, convertible bonds, or bonds with subscription warrant that are issued in order to raise funds necessary for the stock companies that are either the Authorized Small- and Medium-sized Enterprises, or the Authorized Cooperatives or the Small- and Medium-sized Enterprises as constituent members of such Cooperatives, and of which capital is one hundred million yen or over, and that carry out their Specific Business Activities (except for the activities described in sub-clause 4 (2) of Article 2) in conformity with the Authorized Business Operation Plans of Small- and Medium-sized Enterprises, or funds necessary for Small- and Medium-sized Enterprises, of which capital is one hundred million yen or over, install or improve the Specific Equipment described in sub-clauses 5 (3) and (4) of Article 2; and also such Authorized Enterprises or Authorized Cooperatives can hold stocks, convertible bonds (including stocks issued as a result of the conversion), or bonds with subscription warrant in relation to the above-mentioned underwriting (hereinafter generically referred to as the "Underwriting of New Stocks").
2. When the Underwriting of New Stocks is based on the provision of the above clause 1, such Underwriting of New Stocks is regarded as an activity specified in sub-clause 1 (2) of Article 5 of the Law for Small- and Medium Enterprises Investment Promotion Stock Company.

**Article 24. Exceptional case in the Law for Small- and Medium-sized Enterprise Guidance**

1. In addition to the specific guidance activities defined in clause 2 of Article 7 of the Law for Small- and Medium-sized Business Guidance (Law No. 147 of 1963), Prefectural Governors can have the designated corporations, defined in clause 1 of Article 7 of the above Law, implement activities (referred to as the "Guidance Activities Concerning Rationalization of Energy Use" in the next clause 2) through which management diagnoses, guidance, research, and information are provided in connection with the business activities of Small- and Medium-sized Enterprises that contribute to promote Rational Use of Energy and Specific Substances as well as Utilization of Recycled Resources.

2. When the provisions of the Law for Small- and Medium-sized Enterprise Guidance is applied for the guiding activities for Rationalization of Energy Use based on the above clause 1, such activities are regarded as the Specific Guidance Activities specified in clause 1 of Article 7 of the said Law.

#### **Article 25. Special cases for taxation**

1. When an Authorized Cooperative allocates Small- and Medium-sized Enterprises, which are constituent members of the said Cooperative, to bear expenses that are required to acquire or produce machinery or equipment (including tools, devices and appliances) for testing and/or research in conformity with the standards for allocation of costs defined in the Authorized Business Operation Plan of Small- and Medium-sized Enterprises (hereinafter referred to as the "Standards for Expenditure Allocation"), and when the said Small- and Medium-sized Enterprises have paid such allocated expenses, the said allocated expenses can be depreciated in accordance with the provisions of the Special Taxation Law.
2. When an Authorized Cooperative allocates its constituent members to bear expenses to be spent for testing and research based on the Standards for Expenditure Allocation, and when such constituent members have paid the applicable expenses, a special measurement for taxation, which is applicable where there is increase in testing and research costs, shall be applied to such expenses in accordance with the provisions of the Special Taxation Law.
3. When an Authorized Cooperative acquires or produces a fixed asset that is to be used for testing and/or research, with all or a part of the expenses allocated to its constituent members based on the Standards for Expenditure Allocation, a special measure will be taken in accordance with the provisions of the Special Taxation Law.

### **Chapter 4. Miscellaneous provisions**

#### **Article 26. Secured funds**

The government shall secure the funds necessary for the Business Operators in order to promote Rational Use of Energy and Special Substances as well as Utilization of Recycled Resources.

#### **Article 27. Consideration of Small- and Medium-sized Enterprises and their Cooperatives**

The Minister of International Trade and Industry, other relevant ministers, and Prefectural Governors shall execute measures in relation to Rational Use of Energy and Special Substances as well as Utilization of Recycled Resources based on the provisions of this Law in appropriate consideration of Small- and Medium-sized Enterprises and their Cooperatives.

#### **Article 28. Collection of reports**

The competent minister can ask the Authorized Business Operators, other ministers who have regulatory authority over the applicable business entities can ask the Authorized Joint Business Operators, and Prefectural Governors can ask the Authorized Small- and Medium-sized Enterprises or the Authorized Cooperatives to report on the status of the on-going Authorized Business Operation Plans, the Authorized Joint Business Plan, or the Authorized Business Plan of Small- and Medium-sized Enterprises, respectively.

#### **Article 29. Competent ministers**

1. The competent ministers in this Law shall be ones as defined below:
  - 1) In accordance with the government ordinance, the competent ministers with regard to the items for institutions and announcement of the Guidelines for Efforts based on clause 1 of Article 3 as well as items for revision of the Guidelines for Efforts based on clause 2 of the same Article shall be the Minister of International Trade and Industry, the Minister of Construction, the Minister of Agriculture, Forestry and Fisheries, the Minister of Finance, the Minister of Health and Welfare, and the Minister of Transport.
  - 2) With regard to authorization defined in the provisions of clauses 1 and 3 of Article 4 and clause 1 of Article 5, cancellation of authorization defined in the provision of clause 2 of the same Article, discussion described in clause 2 of Article 18, and collection of reports defined in the above Article 28, the competent ministers for the Specific Business Activities specified in sub-clause 4 (1) of Article 2 shall be the Minister of International Trade and Industry and the minister who has regulatory authority over the industrial sector to which the said Business Operator or the Authorized Business Operators belong; the competent ministers related to use of the Building Materials and installation or improvement of facilities or equipment that contribute to Rationalization of Energy Use in connection with the Specific Business Activities described in sub-clause 4 (2) of Article 2 are the Minister of International Trade and Industry and the Minister of Construction, while

for other activities of the Specific Business Activities specified in the same sub-clause it is the Minister of Construction; the competent ministers connected with the Specific Business Activities specified in sub-clause 4 (3) of Article 2 are the Minister of International Trade and Industry and the minister who has regulatory authority over the manufacturing businesses of the industrial products involved with the said technology; the competent minister in relation to the Specific Business Activities described in sub-clause 4 (4) of the same Article is the minister who has regulatory authority over the manufacturing businesses of the industrial products involved with the said technology; the competent minister concerning the Specific Business Activities specified in sub-clauses 4 (5) and (6) of the same Article is the minister who has regulatory authority over the businesses operated by the said Business Operators or the Authorized Business Operators; and, in connection with the Specific Business Activities specified in sub-clause 4 (7) of the same Article, the competent minister connected with the manufacturing technologies for industrial products is the minister who has regulatory authority over the manufacturing businesses involved with the said technologies, and the Minister of Construction for the technologies related to civil engineering.

2. The competency given in this Law can be consigned to the heads of the local branches or departments, to bureaus of ministries, or to Prefectural Governors.

**Article 30.** When the competent minister or other minister (except for the Ministry of Health and Welfare), who has regulatory authority over the applicable Business Operators, authorizes a Business Operation Plan (including cases where it is applied to clause 3 of Article 5) based on clause 3 of Article 4 in relation to the Specific Business Activities (limited to segregated collection of recyclable resources, hereinafter simply referred to as the "Specific Business Activities") specified in sub-clause 4 (6) of Article 2, or authorizes a Joint Business Operation Plan defined in clause 3 of Article 6 (including cases where it is applied to clause 3 of Article 7), or executes measures necessary for smooth implementation of the Specific Business Activities that are to be carried out by the Authorized Business Operators in compliance with the applicable Authorized Business Operation plan, or, of the Joint Business Activities that are to be carried out by the Authorized Joint Business Operators in compliance with the applicable Authorized Joint Business Operation Plan, the applicable minister shall closely consult with the Minister of Health and Welfare if such an authorization or execution of the said measures is related to the measures for appropriate disposal of waste.

## **Article 31. Penal regulations**

1. Persons who neglect to submit the report defined in Article 28 or submit a false report shall be subject to a fine of up to two hundred thousand yen.
2. In the event that the representative director of a corporation, proxy for a corporation or personnel, its employee, or other employee breaches the provision of the above clause 1 in connection with the operations of the corporation or personnel, a penalty shall be imposed on such a corporation or person(s), while the actual breaching person shall be punished.

## **Supplementary provisions**

### **Article 1. Law enforcement date**

This Law is to be enforced commencing on a date within four months from the date of promulgation, as set forth in the government ordinance.

### **Article 2. Abolition of this Law**

This Law shall be abolished not later than March 31, 2003.

### **Article 3. Exceptional case for prohibition of repayment from the Fund**

1. Investors other than the government and the Japan Development Bank may ask the Fund for a refund of their invested amount, if one month or longer has elapsed since the enforcement date of this Law.
2. Notwithstanding the provision of clause 1 of Article 18 of the Specific Facilities Establishment Law, if the Fund is asked to refund based on the provision of the above clause 1, it must refund an amount equivalent to the amount invested by the applicant. In such a case, the capital of the Funds shall be reduced in accordance with the amount paid back.

#### **Article 4. Interim measures for penal regulations**

The applicable penal regulations for any deeds performed before enforcement of this Law shall be the regulations that were in effect before enforcement of this Law.

#### **Article 5. Partial revision of the Special Accounting Law Concerning Countermeasures for Improvement of Demand and Supply of Coal, Oil, and Other Energy**

A part the Special Accounting Law Concerning Countermeasures for Improvement of Demand and Supply of Coal, Oil, and Other Energy (Law No. 12 of 1967) shall be revised as follows:

The following sub-clause shall be added immediately after sub-clause 3 (6) of Article 1:

- 6 (2) Investment in the Industrial Foundation Improvement Fund (restricted to investment to be applied to the Credit Fund for Rationalization of Energy Use defined in clause 1 of Article 13 of the Temporary Law Concerning Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled Resources (Law No. 18 of 1993))

The portion "sub-clauses 3 (1) and (6) of Article 1" that appears in sub-clause 2 (1) of Article 3.2 shall be changed to "sub-clauses 3 (1), (6), and (6.2) of Article 1."

#### **Article 6. Partial revision of the Special Law Concerning Promotion of Specific Commerce Integration**

A part of the Special Law Concerning Promotion of Specific Commerce Integration shall be revised as follows:

The portion "and the special account defined in clause 1 of Article 10 of the Temporary Law Concerning Promotion of Import and Smoothing Investment to Domestic Businesses (Law No. 22 of 1992)" that appears in clause 4 of Article 11 shall be changed to ", the Special Account specified in clause 1 of Article 10 of the Temporary Law Concerning Promotion of Import and Smoothing Investment to Domestic Businesses (Law No. 22 of 1992), and the Special Account for Rationalization of Energy Use defined in clause 1 of Article 12 of the Temporary Law Concerning the Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled Resources (Law No. 18 of 1993) as well as the Special Account for Utilization of Recycled Resources defined in clause 1 of Article 15."



**Article 7. Partial revision of the Stamp Act**

A part of the Stamp Act (Law No. 23 of 1967) shall be revised as follows:

"the activities ... of, and" that appears in Appendix 3 is changed to "the activities of," then, "and the activities specified in sub-clause 1 of Article 10 (the activities of promoting the Specific Business Operations implemented by the Industrial Foundation Improvement Fund) of the Temporary Law Concerning Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled Resources (Law No. 18 of 1993)" underneath "the activities of (the activities for promotion of import as well as smooth investment to domestic businesses implemented by the Industrial Foundation Improvement Fund."

**Article 8. Partial change in the Law for Establishment of the Ministry of Construction**

The portion "and the Law Concerning Rationalization of Energy Use (Law No. 49 of 1979)" that appears in sub-clause 45 of Article 3 shall be changed to ", the Law Concerning Rational Use of Energy (Law No. 49 of 1979), and the Temporary Law Concerning Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled resources (Law No. 18 of 1993)."

**Article 9. Partial revision of the Law for Establishment of the Ministry of Finance**

A portion of the Law for Establishment of the Ministry of Finance (Law No. 144 of 1949) shall be revised as follow:

The following sub-clause shall be added immediately after sub-clause 127.2 of Article 4:

127.3 Promotion of business activities in relation to rational use of energy and specific substances as well as utilization of recycled resources in accordance with the provisions of the Temporary Measure Law Concerning Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled Resources (Law No. 18 of 1993) "and sub-clause 127.3" is added underneath "127.2" in Article 34, and "and" is changed to "as well as."

**Article 10. Partial revision of the Law for Establishment of the Ministry of Health and Welfare**

A portion of the Law for Establishment of the Ministry of Health and Welfare shall be revised as follows:

The portion "and the Law Concerning Promotion of Establishment of Specific Facilities Relevant to Disposal of Industrial Waste (Law No. 62 of 1992)" that appears in sub-clause 28 of Article 5 shall be changed to "the Law Concerning Promotion of Establishment of Specific Facilities Relevant to Disposal of Industrial Waste (Law No. 62 of 1992) and the Temporary Law Concerning Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled resources (Law No. 18 of 1993)".

The following sub-clause shall be added immediately after sub-clause 27 of Article 6:

27.3 To establish Guidelines for efforts, and authorize business plans and joint business plans in accordance with the provisions of the Temporary Law Concerning Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled resources.

#### **Article 11. Partial revision of the Law for Establishment of the Ministry of Agricultural, Forestry and Fisheries**

A part of the Law for Establishment of the Ministry of Agriculture, Forestry and Fisheries (Law No. 153 of 1949) shall be revised as follows:

Change sub-clause 86.3 of Article 4 to sub-clause 86.4 of the same Article, then, add the following sub-clause immediately after sub-clause 86.2:

86.3 To carry out the activities over which the Ministry has regulatory authority in relation to execution of the Temporary Law Concerning Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled Resources (Law No. 18 of 1993)

#### **Article 12. Partial revision of the Law for Establishment of the Ministry of Transport**

A part of the Law for Establishment of the Ministry of Transport (Law No. 157 of 1949) shall be revised as follows:

The following sub-clause shall be added immediately after sub-clause 11.2 of clause 2 of Article 3:

11.3 Items regarding execution of the Temporary Law Concerning Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled Resources (Law No. 18 of 1993)

The following sub-clause shall be added immediately after sub-clause 11 of clause 1 of Article 4:

11.2 To establish guidelines for efforts, and authorize business plans and joint business plans based on the Temporary Law Concerning Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled Resources

**Article 13. Partial revision of the Law for Establishment of the Ministry of International Trade and Industry**

A part of the Law for Establishment of the Ministry of International Trade and Industry (Law No. 275 of 1952) shall be revised as follows:

The following sub-clause shall be added immediately after sub-clause 45 of Article 4:

45.2 Items regarding the execution of the Temporary Law Concerning Promotion of Activities for Rationalization in the Use of Energy, etc. and Utilization of Recycled Resources (Law No. 18 of 1993)

**Article 14. Partial revision of the Law Concerning Restriction of Import and Export of Specific Harmful Waste**

A part of the Law Concerning Restriction of Import and Export of Specific Harmful Waste (Law No. 108 of 1992) shall be revised as follows:

Article 3 of the Supplementary Provisions shall be revised as follows:

Article 3. Partial revision of the Law for Establishment of the Ministry of Health and Welfare

A part of the Law for Establishment of the Ministry of Health and Welfare (Law No. 151 of 1949) shall be revised as follows:

Add ", the Law Concerning Restriction of Import and Export of Specific Harmful Waste (Law No. 108 of 1992)" immediately after "the Law Concerning Promotion of Establishment of Specific Facilities Relevant to Disposal of Industrial Waste (Law No. 62 of 1992)" of sub-clause 28 of Article 28.

## **A. Criteria for Building Owners Concerning the Rationalization of Energy Use in Buildings**

Notification No. 1 of the Ministry of International Trade and Industry and the Ministry of  
Construction of July 29, 1993

### **1. Prevention of heat loss through external walls, windows, etc.**

With regard to the buildings that are to be used for the purposes listed in Appendix 1 (a), the value calculated by dividing the annual heat load in indoor peripheral spaces of the applicable building (i.e. the internal spaces within five meters in level from the centerlines of outside-facing walls on each floor except for the basement, plus the internal space of the floor directly under the roof and the internal space of floors which directly face open air; this interpretation is applied throughout this Notification) by the total floor area (unit: square meters) of indoor peripheral space on every story shall be kept equivalent to or less than the value calculated by multiplying the value shown in Appendix 1 (b) by the scale adjustment factor. In this case, the annual heat load and the scale adjustment factor of indoor peripheral spaces are defined as indicated in the following clauses (1) and (2):

- (1) The annual heat load of indoor peripheral spaces is the total value (unit: megacalorie) of heating load and cooling load listed in the following items (a) through (d) for one year (if use time of each room is set up for respective purposes, only such use time is applied; this interpretation is applied throughout this notification):
  - (a) The amount of heat that penetrates through walls or windows due to difference of atmosphere temperatures between open air and internal peripheral spaces (in the case of heating load, the difference between  $22^{\circ}$  C and the open-air temperature, while for cooling load, the difference between  $26^{\circ}$  C and the open-air temperature; however, for heating load of buildings used for shops selling goods and for heating load of class rooms in school buildings, it shall be the difference of temperatures between  $20^{\circ}$  C and the open-air temperature).
  - (b) Insulation heat penetrating through external walls, windows, etc.
  - (c) Heat generated in indoor peripheral spaces
  - (d) Heat amount of intake open air based on the volumes calculated in the following equations (equation (i) is applied to guest rooms in a building used as a hotel or inn; (ii) is applied to sickrooms in a building used as a hospital or clinic; (iii) is applied to non-

sickrooms in a building used as a hospital or clinic; (iv) is applied to classrooms in a building used as a school; and (v) is applied to non-guest rooms in a building used as a hotel or inn, a building for a shop selling goods, a building used for offices, or non-classrooms in a building used as a school):

(i)  $V = 3.9A_p$

(ii)  $V = 4.0A_p$

(iii)  $V = 6.0A_p$

(iv)  $V = 10A_p$

(v)  $V = 20A_p/N$

V,  $A_p$  and N in the above equations represent the following respective values:

V: Intake volume of open air (unit: cubic meters per hour)

$A_p$ : Floor area of indoor peripheral spaces (unit: square meters)

N: Occupied area per capita for each situation (unit: square meters)

- (2) The scale adjustment factor is the values indicated in Appendix 2, which are applied according on the value calculated by dividing the total area on every floor in a building excluding the basement by the number of floors excluding the basement (hereinafter referred to as "the Average Floor Area") in relation to the number of floors excluding the basement.

## 2. Effective utilization of energy in relation to air-conditioning equipment

With regard to air-conditioners to be installed in the buildings which are used for the purposes listed in Appendix 1 (a), the value calculated by dividing the amount of calories that are converted from the volume of energy consumed for one year in order to correspond to air-conditioning load with the said air-conditioning equipment, by the virtual air-conditioning load of the said building in the same period shall be equivalent to or less than the applicable value indicated in Appendix 1 (c). In this case, conversion of energy volume into calories in relation to the energy shown in the left column of Appendix 3 depends on the values indicated in the right column of the said Appendix (i.e. the applicable value in cases where such a value below the values indicated in the right column of Appendix 3 can be achieved by installing equipment or devices that can improve efficiency of energy use (hereinafter referred to as "Energy Efficiency Improvement Equipment")). As for the other energies, they depend on their compositions, while air-conditioning loads and virtual air-conditioning loads depend on items (1) and (2) defined below:

- (1) Air-conditioning load is the load that arises from the following heat listed:
- (a) Heat penetrating through external walls and windows due to the difference of temperature between open air and indoors (limited to the air-conditioned spaces. This interpretation is also applied to the next sub-clause (2))
  - (b) Insulation heat penetrating through external walls, windows, etc.
  - (c) Heat generated indoors
  - (d) Heat from intaken open air
  - (e) Other heat generated depending on conditions of the said building
- (2) The virtual air-conditioning load is the load generated from the heat listed items (a), (b), (c), and (e) of the above sub-clause (1) as well as the heat of intaken open-air based on the amount (in the case of guest rooms without bath room in a building used as a hotel, it is the amount depending upon the actual conditions) calculated from the following equations (equation (i) is applied to guest rooms in a building used as a hotel or inn; (ii) is applied to sickrooms in a building used as a hospital or clinic; (iii) is applied to non-sickrooms in a building used as a hospital or clinic; (iv) is applied to classrooms in a building used as a school; and (v) is to non-guest rooms in a building used as a hotel or inn, a building of shop selling goods, a building used for offices, or non-classrooms in a building used as a school). However, decrease of load due to collection of waste heat is not taken into consideration.

(i)  $V = 3.9A_r$

(ii)  $V = 4.0A_r$

(iii)  $V = 6.0A_r$

(iv)  $V = 10A_r$

(v)  $V = 10A_r/N$

V,  $A_r$  and N in the above equations represent the following respective values:

V: Intake volume of open air (unit: cubic meters per hour)

$A_r$ : Floor area of indoor floor area (unit: square meters)

N: Occupied area per capita for each situation (unit: cubic meters)

### 3. Effective utilization of energy in relation to mechanical ventilation equipment other than air-conditioning equipment

With regard to mechanical ventilation equipment (except for air-conditioning equipment) to be installed in the buildings which are used for the purposes listed in Appendix 1 (a), the value calculated by dividing the amount of calories, that is converted from the volume of energy

consumed for one year by the said mechanical ventilation equipment (hereinafter referred to as the "Volume of Energy Consumption for Ventilation"), by the amount of calories converted from the virtual energy consumption volume for ventilation in the said building in the same period shall be equivalent to or less than the applicable value indicated in Appendix 1 (d). In this case, conversion of energy volume into calories in relation to the energy shown in the left column of Appendix 3 depends on the values indicated in the right column of the said Appendix (the applicable value where such a value below the value indicated in the right column of Appendix 3 can be achieved by installing Energy Efficiency Improvement Equipment). As for the other energies, it depends upon their composition or other conditions, while the Volume of Energy Consumption for Ventilation and the amount of virtual energy consumption for ventilation depend upon items (1) and (2) defined below:

- (1) The Volume of Energy Consumption for Ventilation is the total amount of electricity consumed for one year by the following equipment (a) through (c):
  - (a) Air intake equipment
  - (b) Air exhaust equipment
  - (c) Other equipment required depending on types of ventilators
- (2) The volume of virtual energy consumption for ventilation is calculated in accordance with the following equation:

$$E = Q \times T \times 3.676 \times 10^4$$

In this equation, E, Q, and T represent the following respective values:

- E: The amount of virtual energy consumption for ventilation (unit: kWh)
- Q: Nominal ventilation capacity (unit: cubic meters per hour)
- T: Annual operation hour (unit: hours)

#### **4. Effective utilization of energy in relation to lighting apparatus**

With regard to lighting apparatus to be installed in a building used for any of the purposes listed in Appendix 1 (a), the value calculated by dividing the amount of calories that are converted from the volume of energy consumed for one year by the said lighting apparatus (hereinafter referred to as the "Volume of Energy Consumption for Lighting"), by the amount of calories converted from the virtual energy consumption volume for lighting in the said building for the same period shall be equivalent to or less than the applicable value indicated in Appendix 1 (e). In this case, while conversion of energy volume into calories is based on 2,250 kilocalories per 1 kWh (the

applicable value where such a value below 2,250 kilocalories per kWh can be achieved by installing Energy Efficiency Improvement Equipment.), the Volume of Energy Consumption for Lighting and the amount of virtual energy consumption for lighting depend upon items (1) and (2) defined below:

- (1) The Volume of Energy Consumption for Lighting is the total electricity consumption for lighting calculated for each indoor room or passage in accordance with the following equation:

$$E_T = W_T \times A \times T \times F / 1,000$$

In this equation,  $E_T$ ,  $W_T$ ,  $A$ ,  $T$ , and  $F$  represent the following respective values:

- $E_T$ : The amount of electricity consumption for lighting in each room or passage (unit: kWh)
- $W_T$ : Electricity consumption in each room or passage (unit: watts per square meter)
- $A$ : Floor area in each room or passage (unit: square meters)
- $T$ : Annual lighting hours in each room or passage (unit: hours)
- $F$ : Factors shown in the following diagram set forth for purposes of the building and control methods of the lighting systems

Purpose of Building	Control Method	Factor
Hospital or clinic, shop selling goods, offices or school	Control by a detector for human presence with card, light sensor, etc.	0.80
	Adjustment for the optimum luminance intensity	0.85
	Time schedule control or illumination control that adopts day light	0.90
	Others	1.00
Hotel or inn	Control by a detector for human presence with card, light sensor, etc., or power point control for guest rooms with room keys, light sensor, etc.	0.80
	Others	1.00

- (2) The volume of virtual energy consumption for lighting is the total virtual electricity consumption for lighting calculated for each room or passage in accordance with the following equation:

$$E_S = W_S \times A \times T \times Q_1 \times Q_2 / 1,000$$

In this equation,  $E_S$ ,  $W_S$ ,  $A$ ,  $T$ ,  $Q_1$  and  $Q_2$  represent the following respective values:



$E_s$ : The amount of virtual electricity consumption for lighting at each room or passage (unit: kWh)

$W_s$ : Standard electricity consumption at each room or passage (unit: watts per square meter)

A: Floor area in each room or passage (unit: square meters)

T: Annual lighting hour in each room or passage (unit: hours)

$Q_1$ : Factors shown in the following diagram set forth for each type of lighting apparatus

Type of Lighting Apparatus	Factor
Lighting apparatus with special measures such as attachment of a louver or translucent cover to control glare	1.3
Others	1.0

$Q_2$ : Factors shown in the following diagram set forth for purposes and luminous intensity of the lighting apparatus

Purpose	Factor
Sales room of shop selling goods, or office room	L/750
Classroom of a school	L/500
Others	1.0

In this diagram, L represents the nominal luminous intensity (unit: lux)

## 5. Effective utilization of energy in relation to hot water supply systems

With regard to hot water supply systems to be installed in a building used for any of the purposes listed in Appendix 1 (a), the value calculated by dividing the amount of calories converted from the volume of energy consumed for one year by the said hot water supply systems (hereinafter referred to as the "Volume of Energy Consumption for Hot Water Supply"), by the virtual hot water supply load in the said building for the same period shall be equivalent to or less than the applicable value indicated in Appendix 1 (f). In this case, conversion of energy amount into calories is based on the values shown in the right column of Appendix 3 in relation to the energies listed in the left column of the same diagram (the applicable value where the value below the figures shown in the right column can be achieved by installing Energy Efficiency Improvement Equipment). Values for the other energies depend upon their compositions and other conditions, while the Volume of Energy Consumption for Hot Water Supply and the virtual hot water supply load depend upon items (1) and (2) defined below:

(1) The Volume of Energy Consumption for Hot Water Supply is the total energy consumed for one year with the following systems (a) through (c):

- (a) Boiler and other hot water supply system
- (b) Water circulation pump
- (c) Other equipment required for types of hot water supply systems

(2) The virtual hot water supply load is the total virtual hot water supply load calculated for each hot water supply location based on the following equation:

$$L = V \times (T_1 - T_2)$$

In this equation, L, T<sub>1</sub>, and T<sub>2</sub> represent the following respective values:

L: Virtual hot water supply load (unit: kilocalories)

V: Volume of used hot water (unit: liters)

T<sub>1</sub>: Temperature of hot water used (unit: ° C)

T<sub>2</sub>: Temperature of hot water for each location (unit: ° C)

## 6. Effective utilization of energy in relation to elevators

With regard to elevators to be installed in a building that is used for any of the purposes listed in Appendix 1 (a), the value calculated by dividing the amount of calories converted from the volume of energy consumed for one year by the said elevators (hereinafter referred to as the "Volume of Energy Consumption for Elevators"), by the amount of calories converted from the virtual energy consumption volume for elevators in the said building for the same period shall be equivalent to or less than the applicable value indicated in Appendix 1 (g). In this case, while conversion of energy volume into calories is based on 2,250 kilocalories per 1 kWh (the applicable value where such a value below 2,250 kilocalories per kWh can be achieved by installing Energy Efficiency Improvement Equipment), the Volume of Energy Consumption for Elevators and the volume of virtual energy consumption for elevators depend upon items (1) and (2) defined below:

(1) The Volume of Energy Consumption for Elevators is the total electricity consumption for elevators calculated for each elevator in accordance with the following equation:

$$E_T = L \times V \times F_T \times T/860$$

In this equation, E<sub>T</sub>, L, V, F<sub>T</sub>, and T represent the following respective values:

E<sub>T</sub>: The amount of electricity consumption for elevators (unit: kWh)

L: Carrying load (unit: kilograms)

V: Rated speed (unit: meters per minute)

F<sub>T</sub>: Factors shown in the following diagram set forth for rated speeds and speed control methods

Rated Speed	Speed Control Method	Factor
120 m per minute or faster	Variable voltage/variable frequency control system	1/45
	Static Leonard system	1/35
	Ward Leonard system	1/30
60 m per minute or faster, but slower than 120 m per minute	Variable voltage/variable frequency control system	1/40
	Static Leonard system	1/30
	AC return control system	1/20
60 m per minute or slower	Variable voltage/variable frequency control system	1/40
	AC return control system, etc.	1/20

T: Annual operation hours (unit: hours)

(2) The volume of virtual energy consumption for elevators is the total of figures calculated by multiplying the amount of virtual electricity consumption calculated for each elevator by the transport capacity factor. In this case, the amount of virtual electricity consumption for elevators and the transport capacity factor depend upon the following items (a) and (b):

(a) The amount of virtual electricity consumption is calculated in accordance with the following equation:

$$E_s = L \times V \times F_s \times T / 860$$

In this equation, E<sub>s</sub>, L, V, F<sub>s</sub>, and T represent the following respective values:

E<sub>s</sub>: The amount of virtual electricity consumption (unit: kWh)

L: Carrying load (unit: kilograms)

V: Rated speed (unit: meters per minute)

F<sub>s</sub>: Factors shown in the following diagram set forth for rated speeds

Rated Speed	Factor
120 m per minute or faster	1/35
Slower than 120 m per minute	1/20

T: Annual operation hours (unit: hours)

(b) The transport capacity factors are to be calculated in accordance with the following

equation. However, where the number of floors is four or less, or where the total floor area of the applicable building is 4,000 square meters or less, the transport capacity factor is calculated by dividing the average operation interval (unit: seconds) by 30 (it should be 1 if the average operation interval is 30 seconds or longer).

$$M = A_1/A_2$$

In this equation, M, A1, and A2 represent the following respective figures:

M: Transport capacity factor

A<sub>1</sub>: Standard transport capacity for respective conditions of the applicable building shown in the following diagram:

Condition of the Applicable Building	Standard Transport Capacity
Building exclusively occupied by a single company	0.25
Other cases	0.20

A<sub>2</sub>: The planned transport capacity calculated by dividing the transportable number of passengers in five minutes by the number of people who use the elevators

### Supplementary Clauses

1. This Notification shall be go into force on August 1, 1993.
2. Notification No. 2 of the Ministry of International Trade and Industry and the Ministry of Construction of 1980, Notification No. 1 of the Ministry of International Trade and Industry and the Ministry of Construction of 1985, and Notification No. 2 of the Ministry of International Trade and Industry and the Ministry of Construction of 1991 shall all be abolished.

### Appendix 1

(a)	Hotel or Inn	Hospital or Clinic	Shop Selling Goods	Office	School
(b)	100	85	90	80	80
(c)	2.5	2.5	1.7	1.5	1.5
(d)	1.5	1.2	1.2	1.2	0.9
(e)	1.2	1.0	1.2	1.0	1.0
(f)	1.6	1.8	—	—	—
(g)	—	—	—	1.0	—

**Appendix 2**

No. of floors excluding basement	Average area per floor	50 square meters or less	100 square meters or less	200 square meters or less	300 square meters or less
	1		2.40	1.68	1.32
2 or more		2.00	1.40	1.10	1.00

Where the average area per floor is between the above figures, the scale adjustment factor is calculated proportionally from the closest scale adjustment factor.

**Appendix 3**

Heavy oil	9,700 kilocalories per liter
Kerosene	8,900 kilocalories per liter
Liquefied petroleum gas	12,000 kilocalories per kilogram
Electricity	2,250 kilocalories per kWh

## B. Criteria for Building Owners Concerning Rationalization in the Use of Energy in Houses

(Notification No. 1 of the Ministry of International Trade and Industry and the Ministry of  
Construction of February 28, 1980.

Notification No. 2 of the Ministry of International Trade and Industry and Ministry of  
Construction.

Fully revised on February 28, 1992)

### 1. Referential, specific heat loss factors in accordance with the type of houses and classification of areas

- (1) Owners of houses shall achieve residential specific heat loss factor of their houses (that of each house in the case of combined houses, row houses, apartment houses, etc.) that is less than the referential values as shown below in accordance with types of houses in each classified residential area (stipulated in the separate table, which must be applied hereinafter) as shown in the following table.

Types of houses	Specific heat loss factors (Unit: Kilocalories/hour/m <sup>2</sup> /one time)					
	Classification of residential areas					
	I	II	III	IV	V	VI
Detached houses, Combined or row houses	1.5	2.3	2.7	3.4	3.7	5.5
Apartment houses	1.3	1.9	2.3	2.7	3.2	4.8

- (2) The specific heat loss factor must be calculated according to the following expression.

$$Q = \sum A_i K_i H_i + \sum (L F_i K L_i H_i + A F_i K F_i) = 0.3 n B / S$$

where

Q = specific heat loss factor,

A<sub>i</sub> = area of No. i building element (unit: m<sup>2</sup>) contacting the space under the floor, attic space or garret exposed to the open air (hereinafter, referred to as "air, etc.") In this case floors in which the ground surface is covered with concrete or equivalent materials and floors with a space under them not exposed to the open air (hereinafter, referred to as "earth floors") shall be excluded.

$K_i$  = thermal transmittance of No. i building element (This is the value in kilocalories expressing the quantity of heat flowing through per hour and square meter when the difference between temperatures inside and outside is  $1^\circ\text{C}$ . The thermal transmittance shall be calculated by taking into consideration the kinds and thickness of materials structuring the corresponding building element in the azimuth orientation of heat flow, and heat bridge (the part where thermal insulation property is deteriorated by structuring materials such as metals, etc.),

$H_i$  = factor shown in the following table in accordance with the classification of "air, etc." to which the outer region of No. i building element or No. i earth floor,

Air	Attic space or garret exposed to the open air	Space under floors exposed to the open air
1.0	1.0	0.7

$L_{Fi}$  = length of the outer region of No. i earth floor, etc. (unit: m)

$K_{Li}$  = thermal transmittance of the outer region of No. i earth floor (This is the value in kilocalories expressing the quantity of heat flowing through per hour and square meter when the difference between temperatures inside and outside is  $1^\circ\text{C}$ . The thermal transmittance shall be calculated by taking into consideration the kinds and thickness of materials structuring corresponding to building element in the azimuth orientation of heat flow.),

$A_{Fi}$  = area of the central part of No. i earth floor (area of the floor reduced by one meter wide outer region (unit:  $\text{m}^2$ ),

$K_{Fi}$  = thermal transmittance of the central part of No. i earth floor (This is the value in kilocalories expressing the quantity of heat flowing through per hour and square meter when the difference between temperatures inside and outside is  $1^\circ\text{C}$ . The thermal transmittance shall be calculated by taking into consideration the kinds and thickness of materials structuring corresponding to building element in the azimuth orientation of heat flow.),

$n$  = number of natural ventilations in accordance with the type of houses shown in the following table (unit: Frequency per hour)

	Types of houses	Number of natural ventilations
(a)	Reinforced concrete houses or airtight houses	0.5
(b)	Masonry structured houses other than those in (a) above, industrialized houses and wood-frame constructed houses	0.7
(c)	Houses other than those in (a) and (b) above	1.0

The "airtight houses" means those with a crack of  $5\text{cm}^2$  or less per  $\text{m}^2$  of floor area, which is calculated by the following expression.

$$C = 0.7V/S$$

where

C = crack in  $\text{cm}^2$  per  $\text{m}^2$  floor area,

V = quantity of air flow passing through the crack when the difference between pressures outside and inside is one mm water column (unit:  $\text{m}^3$  per hour),

S = total floor area (in the case of apartment houses, common floor parts must be excluded) (unit:  $\text{m}^2$ ),

B = air volume of houses (unit:  $\text{m}^3$ ),

S = total floor area (in the case of apartment houses, common floor parts must be excluded) (Unit:  $\text{m}^2$ )

## 2. Types of houses in area I and area II

Owners of houses in area I stipulated in the separate table shall build airtight houses or reinforced concrete houses, while those in area II shall try to build airtight houses or reinforced concrete houses.

## 3. Referential solar heat gain factor of houses in each area

- (1) The referential solar heat gain factor of houses in each area must be less than the following values:

Classification of areas					
I	II	III	IV	V	VI
		0.1			0.08

- (2) The solar heat gain factor stipulated in (1) must be calculated by the following expression.

$$\mu = (\sum (\sum A_{ij} \eta_{ij}) v_j + \sum A \gamma_i \eta \gamma_i) / S$$



where

$\mu$  = solar heat gain factor

$A_{ij}$  = Area of No. i wall exposed to the open air in No. j azimuth orientation (openings mounted to the wall shall be included, which must be applied hereinafter) (Unit: m<sup>2</sup>),

$\eta_{ij}$  = solar radiation penetration factor of No. i wall in the No. j azimuth orientation (the ratio between the quantity of incident solar radiation and the quantity of solar radiation penetrates the house, which must be applied hereinafter),

$v_j$  = factors shown in the table below in accordance with the classified areas in No. j azimuth orientation,

Azimuth orientation \ Classification of areas	III	IV	V	VI
East/west	0.45	0.45	0.44	0.43
South	0.41	0.39	0.36	0.34
Southeast/southwest	0.46	0.45	0.43	0.42
North	0.25	0.24	0.23	0.20
Northeast/northwest	0.35	0.34	0.34	0.32

$A_{\gamma i}$  = horizontal projecting area of No. i roof (including the openings mounted on the roof, which must be applied hereinafter) (Unit: m<sup>2</sup>),

$\eta_{\gamma i}$  = solar radiation penetrating factor of No. i roof or the ceiling immediately under corresponding roof (including openings mounted to the ceiling),

$S$  = total floor area (in the case of apartment houses, common parts must be excluded) (Unit: m<sup>2</sup>).

**Separate table**

Classification of areas	Name of prefectures
I	Hokkaido
II	Aomori, Iwate, Akita
III	Miyagi, Yamagata, Fukushima, Ibaraki, Tochigi, Gumma, Niigata, Toyama, Ishikawa, Fukui, Yamanashi, Nagano, Gifu, Shiga
IV	Saitama, Chiba, Tokyo, Kanagawa, Shizuoka, Aichi, Mie, Kyoto, Osaka, Hyogo, Nara, Wakayama, Tottori, Shimane, Okayama, Hiroshima, Yamaguchi, Tokushima, Kawaga, Aichi, Kochi, Fukuoka, Saga, Nagasaki, Kumamoto, Oita
V	Miyagi, Kagoshima
VI	Okinawa

## **C. Guideline for Design and Construction for Rationalization in Use of Energy in Houses**

(Notification No. 195 of the Ministry of Construction of February 29, 1980.

Notification No. 451 of the Ministry of Construction.

Fully revised on February 28, 1992)

### **1. Parts to be thermal-insulating structured**

The following parts shall be thermally insulated in order that heat loss may be prevented (hereinafter referred to as "adiabatic construction"). 1) Roofs (excluding those with attic space or garret exposed to the open air), or ceilings immediately under corresponding roofs. 2) Ceilings, walls, floors that expose to the open air (hereinafter, referred to as space under the floor, attic spaces, garrets, which are exposed to the open air). In this case floors in which the ground surface is covered with concrete or equivalent materials and floors with a space under them not exposed to the open air (hereinafter, referred to as "earth floors") shall be excluded. 3) Openings and earth floors whose outer regions expose to the open air. However, this shall not be applicable to any parts that fall under any one of the following articles (1) to (3).

- (1) Building elements that divide a storeroom or garage (hereinafter referred to as "storeroom, etc.") and a division other than storeroom that is of thermal insulating structure.
- (2) Space under the floor, attic spaces, garrets, which are exposed to the open air.
- (3) Eaves, wing walls, and floor of a projecting veranda

### **2. Standard thermal insulating performance**

When each building element is of thermal insulating structure in accordance with article 1. above, it shall be in accordance with those standards stipulated in the following (1) and (2).

- (1) The thermal transmittance in each building element shall be equal to or less than the values stipulated in the following table in accordance with the type of houses and classification of areas.

Type of houses		Building elements		Thermal transmittance					
				Classification of areas					
				I	II	III	IV	V	VI
(1)	Reinforced concrete houses and airtight houses	Roofs or ceilings		0.20	0.44	0.57	0.57	0.57	0.57
		Walls		0.36	0.66	0.66	0.75	0.96	
		Floors	Floors exposed to the open air	0.22	0.39	0.39	0.60	0.74	
			Others	0.31	0.55	0.55	0.85	1.06	
		Outer regions of the earth floor	Outer regions of earth floors exposed to the open air	0.37	0.67	0.67			
			Outer regions of other earth floors	0.53					
Openings		2.0	3.0	4.0	5.6	5.6	5.6		
(2)	Masonry structured houses other than those in (1) above, industrialized houses and wood-frame constructed houses	Roofs or ceilings			0.36	0.51	0.51	0.51	0.51
		Walls			0.57	0.57	0.67	0.88	
		Floors	Floors exposed to the open air		0.34	0.34	0.53	0.68	
			Other floors		0.48	0.48	0.75	0.97	
		Outer regions of earth floors exposed to the open air			0.57	0.57			
Openings			3.0	4.0	5.6	5.6			
(3)	Houses other than those in (1) and (2)	Roofs or ceilings			0.28	0.41	0.41	0.41	0.41
		Walls			0.43	0.43	0.54	0.76	
		Floors	Floors exposed to the open air		0.26	0.26	0.43	0.58	
			Other floors		0.37	0.37	0.62	0.83	
		Outer regions of earth floors	Outer regions of earth floors exposed to the open air		0.42	0.42			
			Outer regions of other earth floors		0.60	0.60			
Openings			3.0	4.0	5.6	5.6	5.6		

1. For building elements other than outer regions of earth floors, etc., "thermal transmittance" means the value in kilocalories expressing the quantity of heat flowing through per hour and square meter when the difference between temperatures inside and outside is 1°C. The thermal transmittance shall be calculated by taking into consideration the kinds and thickness of materials structuring the corresponding building elements in the azimuth orientation of heat flow, and heat bridge (the part where thermal insulation property is deteriorated by structuring materials such as metals, etc.).

For the outer region of earth floors, the "thermal transmittance" also means the quantity of heat in kilocalories that flows through per m<sup>2</sup> for one hour when the difference between outside temperature and inside temperature is 1°C. However, it shall be calculated by taking into consideration the kind and thickness of materials constituting the corresponding building elements in the azimuth orientation of heat flow only.

2. The "classification of areas" means area divisions stipulated in the Criteria for Building Owners Concerning Rationalization in the Use of Energy issued by the notification No. 2 of the Ministry of International Trade and Industry and the Ministry of Construction of February 28, 1992 (hereinafter referred to as "Judgment standard").

3. The "airtight houses" means the houses stipulated in item (2), 1, Judgment Standard, which must be applied hereinafter.

(2) The thermal resistance in each building element other than openings shall be more than the values listed in Table 1 in accordance with types of houses and classification of areas. The fittings of openings must be of the same kinds or different combinations stipulated in Table 2, with performances equivalent to or better than those in the table.

Table 1

Types of houses	Building elements			Thermal resistances of thermal insulators (unit: m <sup>2</sup> /time/degree per kilocalorie)							
				Classification of areas							
				I	II	III	IV	V	VI		
(1)	Reinforced concrete houses or airtight houses of wood frame construction	Roofs and ceilings			3.4	1.9	1.3	1.3	1.3	1.3	
		Walls			2.0	1.1	1.1	0.9	0.6		
		Floors	Floors exposed to the open air	Tatami-floor	2.9	1.6	1.6	0.7	0.3		
				Boarded floor	3.4	2.1	2.1	1.2	0.8		
			Other floors	Tatami-floor	2.0	0.7	0.7	0.1			
				Boarded floor	2.5	1.2	1.2	0.6	0.4		
		Outer regions of earth floors	Outer regions of earth floors exposed to the open air			2.5	0.2	0.2			
			Outer regions of other earth floors			0.7					
(2)	Wooden airtight houses	Roofs and ceilings			5.1	2.0	1.5	1.5	1.5	1.5	
		Walls			2.9	1.1	1.1	1.0	0.6		
		Floors	Floors exposed to the open air	Tatami-floor	3.9	1.7	1.7	0.7	0.4		
				Boarded floor	4.4	2.2	2.2	1.2	0.9		
			Other floors	Tatami-floor	2.4	0.7	0.7	0.1			
				Boarded floor	2.9	1.2	1.2	0.6	0.4		
		Outer regions of earth floors	Outer regions of earth floors exposed to the open air			2.5	0.2	0.2			
			Outer regions of other earth floors			0.7					
(3)	Airtight houses other than described in (1) and (2) above	Roofs and ceilings			6.1	2.4	1.8	1.8	1.8	1.8	
		Walls			3.5	1.3	1.3	1.2	0.7		
		Floors	Floors exposed to the open air	Tatami-floor	4.8	2.1	2.1	0.9	0.6		
				Boarded floor	5.3	2.6	2.6	1.4	1.1		
			Other floors	Tatami-floor	3.0	0.9	0.9	0.2			
				Boarded floor	3.5	1.4	1.4	0.7	0.5		
		Outer regions of earth floors	Outer regions of earth floors exposed to the open air			2.5	0.2	0.2			
			Outer regions of other earth floors			0.7					

(4)	Masonry structured houses other than described in (1)	Roofs and ceilings			2.6	1.8	1.8	1.8	1.8	
		Walls			1.3	1.3	1.1	0.7		
		Floors	Floors exposed to the open air	Tatami-floor		1.9	1.9	0.9	0.4	
				Boarded floor		2.4	2.4	1.4	0.9	
		Other floors	Tatami-floor		1.0	1.0	0.2			
			Boarded floor		1.5	1.5	0.7	0.4		
Outer regions of earth floors exposed to the open air			0.5	0.5						
(5)	Wood frame constructed houses	Roofs and ceilings			2.6	1.8	1.8	1.8	1.8	
		Walls			1.4	1.4	1.0	0.6		
		Floors	Floors exposed to the open air	Tatami-floor		2.1	2.1	1.0	0.5	
				Boarded floor		2.6	2.6	1.5	1.0	
		Other floors	Tatami-floor		1.3	1.3	0.3			
			Boarded floor		1.8	1.8	0.8	0.5		
Outer regions of earth floors exposed to the open air			0.5	0.5						
(6)	Wooden houses other than described in (2) and (5)	Roofs and ceilings			3.3	2.2	2.2	2.2	2.2	
		Walls			2.2	2.2	1.5	0.9		
		Floors	Floors exposed to the open air	Tatami-floor		3.3	3.3	1.4	0.8	
				Boarded floor		3.8	3.8	1.9	1.3	
		Other floors	Tatami-floor		1.7	1.7	0.6	0.1		
			Boarded floor		2.2	2.2	1.1	0.6		
Outer regions of earth floors	Outer regions of earth floors exposed to the open air		1.7	1.7						
	Outer regions of other earth floors		0.4	0.4						
(7)	Houses other than described in (1) through (6)	Roofs and ceilings			3.9	2.6	2.6	2.6	2.6	
		Walls			2.6	2.6	1.8	1.0		
		Floors	Floors exposed to the open air	Tatami-floor		4.1	4.1	1.8	1.1	
				Boarded floor		4.6	4.6	2.3	1.6	
		Other floors	Tatami-floor		2.0	2.0	0.7	0.3		
			Boarded floor		2.6	2.6	1.3	0.8		
Outer regions of earth floors	Outer regions of earth floors exposed to the open air		1.7	1.7						
	Outer regions of other earth floors		0.4	0.4						

1. The "outer region of earth floors" means the peripheral area one meter wide measured from the outer edge.
2. If using such tatami-floors as "Polystyrene Form Sandwich Tatami Floor" stipulated in A5911-1985 of Japanese Industrial Standard (hereinafter referred to as "JIS"), "Insulation Fiberboard Sandwich Tatami Floor" in JIS A5912-1985, or "Tatami" in JISA5914-1990, the thermal resistance of thermal insulators of the board floors reducing the thermal resistance of thermal insulators used for those tatami-floors can be applied.
3. The thermal resistance of thermal insulator in the outer region of earth floors shall indicate the thermal resistance of the thermal insulator constructed vertically on the ground level outside or inside the foundation.
4. In the case of true-wall construction method where thermal insulators cannot be incorporated in the wall, one of the two methods below shall be followed.
  - (a) If the total area of the true-wall is less than 30% of the area of all the walls to be thermally insulated, the thermal resistance of the thermal insulators reduced because of the corresponding true-wall shall be added to the thermal resistance of the thermal insulators used for any building elements such as roofs, ceilings, walls other than true-wall, or floors.
  - (b) Heat insulators must be constructed outside the true-wall.
5. If building elements of different types of houses coexist in a house, the thermal resistance of each building element shall be in accordance with the corresponding types of houses.
6. If the values of thermal resistance of any building elements shown in the table above are reduced for any reason, the reduced thermal resistance values must be added to the thermal resistance of all the other building elements.



Table 2

Classification of areas	Types of fittings and their combination
I	<p>Those falling under one of (a) to (e) below</p> <ul style="list-style-type: none"> <li>(a) Single glass panel incorporating a fitting of triple-constructed</li> <li>(b) Fittings double-constructed with a fitting incorporating a single glass panel and a fitting incorporating a low radiation, multiple-layer glass (with an air layer of more than 12mm)</li> <li>(c) Fittings double-constructed with a fitting incorporating a single glass panel and a fitting incorporating a multiple-layer glass (with an air layer of more than 12mm), in which one of the two fittings is made of wood or plastic or having the thermal resistance equivalent to that of wood or plastic or more.</li> <li>(d) Airtight, wooden fittings using three glass layers (Air layers must be more than 12mm.)</li> <li>(e) Fittings incorporating multi-layer glass with low radiation (air layers must be more than 12mm), which have the thermal resistance equivalent to that of wooden or plastic airtight fittings or more.</li> </ul>
II	<p>Those falling under one of (a) to (c) below</p> <ul style="list-style-type: none"> <li>(a) Fittings that are double-constructed with a glass panel incorporated fitting, where 1) one of the fittings is made of wood or plastic, or having the thermal resistance equivalent to wood or plastic, or 2) one of the fittings is made of metal, in which the frame is connected with soft polyvinyl chloride material (JIS K6723-1983, Soft polyvinyl compound) more than 3mm thick and less than 10mm wide or any other materials having thermal resistance equivalent to soft polyvinyl chloride material.</li> <li>(b) Fittings incorporating multi-layer glass (air layers must be more than 6mm), which have the thermal resistance equivalent to that of wooden or plastic airtight fittings.</li> <li>(c) Fittings double-constructed with a fitting incorporating glass panel and a fitting incorporating multi-layer glass</li> </ul>
III	<p>Those falling under (a) or (b) below</p> <ul style="list-style-type: none"> <li>(a) Double-constructed fittings incorporating single glass panel</li> <li>(b) Fittings incorporating multi-layer glass</li> </ul>
IV	
V	Fittings incorporating a single glass panel
VI	

1. The "multi-layer, low-radiation glass" means a glass using one or more glass panes with vertical radiation ratio of 0.20 or less, or two glass panes with vitalistic radiation ratio of 0.35 or less in accordance with the stipulation in JIS R3106-1985 (glass transmittance, reflectance, and heat insulation acquisition testing methods).
2. The "airtight fittings" means those meeting airtightness of grade 2 stipulated in JIS A4706-1989 (metal-framed glass sliding door).

### 3. Standard in relation with airtight house construction

The airtight house to be constructed must be damp-proof with airtightness equal to damp-proof, airtight layer (0.1mm thick polyethylene film, stipulated in JIS Z1702-1986, Packing Polyethylene Film) in accordance with the type of houses and stipulation in the following (1), (2) and (3).

#### (1) Wooden houses

They must be constructed in any of the following construction methods (if building houses in the frame wall construction method, (a) and (b) below must be followed).

- (a) The connections between a roof and a ceiling and a wall or between wall and floor corner of opening, where structuring building elements are exposed to the open air, must have 150mm damp-proof, airtight layers overlapped.
- (b) In cases other than (a) above, when damp-proof, airtight layers are overlapped, they shall be overlapped 100mm or more at a part where the substrate materials exist.
- (c) In the connections between partition walls and connections, substrate materials must be constructed after thermal insulation material and damp-proof, airtight layers are constructed.

#### (2) Steel structured houses

They must be constructed in accordance with the construction method (1).

#### (3) Masonry structured houses

Heat insulator must be constructed outside the part to be heat-insulated in accordance with the construction method (1).

#### 4. Solar shading standard

- (1) In the areas listed in separate tables III, IV, V and VI, roofs and ceilings must be thermally insulated as stipulated in article 2 above.
- (2) In the areas listed in separate tables III, IV, V and VI, eaves must be mounted at windows facing east-north-east, south, and west-north-west so that the solar radiation penetrating factor (ratio of total quantity of incident solar radiation to quantity of solar radiation penetrating inside the house) may be less than 0.6.

#### 5. Precautions for design and construction

The following precautions must be followed in addition to the stipulations of 1, 2, 3 and 4 above.

- (1) Rationalization of residential energy use must be achieved by making the best use of solar radiation in winter, etc., and the following matters must be taken into consideration.
  - (a) The proper size of openings of a window must be positioned and structured properly so that the heat of solar radiation may enter in winter and ventilation may be good in summer.
  - (b) Eaves or hoods (awnings) must be properly positioned and structured so that the heat of solar radiation may be used by considering the solar altitude in winter.
  - (c) Facilities such as air-conditioners must provide good performance, mounting position, heating-medium conveying system in accordance with the application, floor area, thermal insulation property of the corresponding habitation rooms, etc.
- (2) The following precautions must be followed to ensure the safety, coziness and thermal insulation property of houses.
  - A. In particular, following measures in (a), (b) and (c) must be taken into construction with thermal insulators.
    - (a) Heat insulators shall be constructed at required building elements without cracks.
    - (b) Necessary measures shall be taken to avoid air entering the room through connections between a roof, ceiling, wall and floor.
    - (c) An effective venting shutter must be mounted in the connections between a partition wall, ceiling, and floor when the inside space of a partition wall is open to garrets or space under floors.
  - B. In order to prevent condensation from occurring, the following measures must be taken.
    - (a) There must be high vapor resistance on the room side, while it must be low on the open air side.

- (b) If thermal insulators such as glass fiber, rock fiber or similar materials with a small vapor resistance are used in the construction, moisture-proof layers must be applied without crevices on the room side.
  - (c) If wirings, pipings or similar materials penetrate thermal insulators or moisture-proof layers, thermal insulators must be constructed without cracks, and the moisture-proof layers must keep their airtightness.
  - (d) In the areas listed in Tables I and II, a ventilation layer must be provided on the open air side of heat insulators for walls and roofs for removal of moisture from the parts.
  - (e) In the space under floors, effective measures for moisture resistance shall be taken: the ground surface of the space shall be covered with a moisture-proof layer, or venting openings shall be provided in proper positions.
- C. If a luminaire (stipulated in JIS Z8113-1988) is embedded in the ceiling of a thermal insulating structure, cover the luminaire with thermal insulating materials.
- (3) Proper quantity of and route for ventilation must be ensured, and heating apparatus that does not contaminate the air must be provided when designing and constructing airtight houses.

## D. Announcement of thermal insulation property of construction materials

(Notification from the Ministry of International Trade and Industry  
of February 29, 1980)

This is to announce the standard performance of thermal insulation for construction materials to carry out the Law Concerning Rational Use of Energy (Law No.49 in 1979).

Articles may be added to or revised on the list of thermal insulation performance, if necessary.

The kinds and conditions of thermal insulation performance are as follows:

### (1) Kinds of thermal insulation performance

- 1 For uniform materials, heat conductivity must be indicated.
- 2 For materials in which differing substances or air layers are combined, in which the surface is smooth, thermal resistance must be indicated.

### (2) Conditions for thermal insulation performance

- 1 Heat conductivity must be measured at room temperature (average of about 20°C) and in air-dried climate with moisture of 50 to 70%.
- 2 Thermal resistance must also be measured at the room temperature and in air-dried climate.

### Thermal insulation performance of construction materials

#### (1) Heat conductivity

Classification	Kinds	Density (g/cm <sup>3</sup> )	Referential values (kcal / mh°C)
Name of materials			
Cement			
Concrete		2.3	1.4
Gas concrete	Autoclaved lightweight concrete (ALC)	0.5	0.11
Mortar	Cement mortar	2.0	1.1
	Perlite mortar	0.5~0.7	0.12
		0.8~1.0	0.19
		1.1~1.4	0.31
	Vermiculite mortar	0.50~0.55	0.12
	0.56~0.75	0.17	
	0.76~0.95	0.22	

Classification	Kinds	Density (g/cm <sup>3</sup> )	Referential values (kcal / mh°C)
Name of materials			
Lightweight aggregate concrete	Artificial lightweight aggregate (A.L.A) concrete		
	1st class	1.9	0.7
	2nd class	1.6	0.5
Asbestos cement corrugated sheet	Asbestos cement sheet	1.5~2.0	1.1
	Flexible sheet	1.1~1.5	0.6
	Asbestos cement calcium silicate sheet	0.6~1.2	0.13
Metals			
Copper		8.3	320
Aluminum alloy		2.7	180
Carbon steel	Carbon: 0.1% or less	7.9	47
Lead		11.4	30
Stainless steel	18-8	7.4	13
Rocks			
Granite		2.6~2.9	2.5
Marble		2.5~2.7	2.4
Daikoku stone		1.4~1.9	1.1
Natural slate		2.2~2.4	1.2
Inorganic fibers			
Glass fiber	Heat insulating board No. 2 (Remarks) 10K, 12K	0.010~0.015	0.045
		0.016~0.023	0.040
	(Remarks) 16K, 20K	0.024~0.039	0.035
	(Remarks) 24K, 32K	0.040~0.096	0.030
	(Remarks) 40K, 48K, 64K, 96K		
Heat insulating board No. 3 (Remarks) 96K, 100K		0.080~0.120	0.036
Rock fiber	Rock fiber mats, Rock fiber felts	0.030~0.070	0.033
	Thermal insulating boards No. 1 and 2	0.071~0.160	0.030
	Thermal insulation board No. 3	0.161~0.300	0.035
	Fancy sound absorption boards	0.04~0.05	0.055
	Sheathing boards	0.04~0.05	0.055
Spray rock fiber		0.15~0.25	0.04

Classification Name of materials	Kinds	Density (g/cm <sup>3</sup> )	Referential values (kcal / mh°C)
<b>Glass</b>			
Sheet glass		2.5	0.68
Foamed glass		0.15	0.05
<b>Gypsum</b>			
Gypsum board		0.71~0.1	0.19
Gypsum plaster		1.9	0.5
<b>Other inorganic fibers</b>			
Lime sand plaster		1.9	0.6
Plaster		0.3	0.6
Mud wall, Scratch coat		1.2	0.6
Vermiculite plaster		0.9	0.1
Normal brick		1.5	0.24
Tile		2.4	1.1
Perlite	Thermal insulating boards No. 1 and 2	0.2~0.3	0.06
<b>Wooden</b>			
Insulation boards	class A	0.23~0.30	0.042
	class B	0.35~0.40	0.050
	class T	0.20~0.25	0.039
	Sheathing board	0.30~0.40	0.045
Hard fiberboards		0.8~1.1	0.15
Semi-hard fiberboards		0.4~0.8	0.10
Particle boards	type 200	0.79~0.83	0.12
	type 150	0.70~0.74	0.11
	type 100	0.58~0.62	0.10
Cement chip board		0.5~0.7	0.15
<b>Plastic</b>			

Form polystyrene (Bead scuffing product)	Thermal insulating board No. 1	0.030~0.040	0.031
	Thermal insulating board No. 2	0.025~0.029	0.032
	Thermal insulating board No. 3	0.020~0.024	0.034
	Thermal insulating board No. 4	0.016~0.019	0.037
Extractive polystyrene		0.030~0.040	0.024
		0.025~0.029	0.032

Classification Name of materials	Kinds	Density (g/cm <sup>3</sup> )	Referential values (kcal / mh°C)
Low density polyethylene		0.065~0.11	0.045
		0.040~0.064	0.038
		0.030~0.039	0.032
		0.022~0.029	0.030
Urea foam Hard polyurethane foam	Thermal insulating board No. 1	0.010~0.014	0.035
		0.050~0.060	0.024
	Thermal insulating board No. 2	0.040~0.049	0.023
	Thermal insulating board No. 3	0.035~0.039	0.021
	Thermal insulating board No. 4	0.030~0.034	0.021
	Thermal insulating board No. 5	0.025~0.029	0.023
	(Remarks) Site foam products shall conform to the above.		
Glassfiber reinforced polyester (2) Thermal resistance		1.36	0.18

Name of materials	Kinds	Referential values (m <sup>2</sup> h°C / kcal)
Multi-layered glass	Thickness 12mm (3-6A-3)	0.13
	" 16mm (5-6A-5)	0.14
	" 18mm (3-12A-3)	0.17



Carpet	"	22mm (5-12A-5)	0.17
	Pile length	3~ 5mm	0.08
		6~ 8mm	0.14
		9~11mm	0.20
		12~15mm	0.25

(Remarks) Carpet backed by about 2mm thick jute or synthetic resin

Tatami	Thickness	55mm	0.6
Hollow concrete	Volumetric specific gravity	1.8	
	Thickness	100mm	0.19
		150mm	0.22
		190mm	0.25
	Volumetric specific gravity	1.2~1.5	
Thickness	100mm	0.22	
	150mm	0.27	
	190mm	0.31	

Name of materials	Kinds	Referential values ( $m^2h^{\circ}C / kcal$ )	
Air layer sealed on both sides by ordinary materials (with emittance of 0.8 or more)	Thickness 10mm	Thermal flow direction { Upward 0.15	
		{ Horizontal 0.16	
		{ Downward 0.18	
	Thickness 20mm or more	{ Upward 0.17	
		{ Horizontal 0.19	
		{ Downward 0.23	
	The same air layer in which aluminum foil is applied on one side.	Thickness 20mm or more	{ Upward 0.38
			{ Horizontal 0.45
			{ Downward 0.95
The same air layer in which aluminum foil is applied on both sides	Thickness 20mm or more	{ Upward 0.40	
		{ Horizontal 0.47	
		{ Downward 1.10	

Air layer of panel which is sealed by	Thickness 26mm	0.30
ordinary materials on both sides of	Thickness 46mm	0.42
paper core (size of honeycomb cells: 24mm)	Thickness 86mm	0.65

## E. Announcement of thermal insulation property of construction materials

(Notification of the Ministry of International Trade and Industry  
of March 15, 1980)

In relation with the announcement of the standard performance of thermal insulation for construction materials to carry out the Law Concerning Rational Use of Energy (Law No.49 in 1979) of February 29, 1980, this is to announce the addition of the following articles. These articles may be added or revised to the list of thermal insulation performance, if necessary.

### 1. Kinds of thermal insulation performances

(1) For materials whose surface is complex, thermal transmitting resistance must be indicated.

### 2. Conditions for thermal insulation performance

(1) Thermal transmitting resistance must be obtained by deducting  $0.04\text{m}^2\text{h}^\circ\text{C} / \text{kcal}$  from the thermal transmittance resistance measured at room temperature (average of about  $20^\circ\text{C}$ ) and in air-dried climate (moisture of 50 to 70%) under the condition of natural ventilation on both sides, taking into consideration the air speeds on the room side of the wall (natural ventilation) and on the open air side (3-5m/sec.).

### Thermal insulation property values of construction materials

#### (1) Thermal transmitting resistance

Name of materials	Kinds	Referential values ( $\text{m}^2\text{h}^\circ\text{C} / \text{kcal}$ )	Remarks
Double sliding, single aluminum-framed glass doors for houses	Glass 3mm	0.18	Sash of nominal module size of 1173mm
Double sliding, double aluminum-framed glass doors for houses	Frame, internally and externally integrated glass 3mm	0.31	Same as above
	Frame, internally and externally independent glass 3mm	0.33	Same as above

	External type	0.42	Same as above
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> External: Multi-layered glass  Air layer: 6mm  Internal: Glass 3mm </div>		
Double sliding, double aluminum-framed glass doors for houses	Internal and external glass: 3mm	0.40	Same as above
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> External: Aluminum-framed  Internal:  Vinyl-chloride-framed </div>	Vinyl-chloride-framed glass doors with heat-ray reflecting film attached	0.57	Same as above
Glass block	Thickness: 95mm	0.35	