
International Standard



4190/6

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

**Lifts and service lifts (USA: elevators and dumbwaiters) —
Part 6: Passenger lifts to be installed in residential
buildings — Planning and selection**

Ascenseurs et monte-charge — Partie 6: Ascenseurs à installer dans les immeubles à usage d'habitation — Critères de sélection

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Descriptors : lifts, installation, buildings, selection, characteristics.

Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 4190/6 was prepared by Technical Committee ISO/TC 178, *Lifts, escalators, passenger conveyors*.

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Lifts and service lifts (USA: elevators and dumbwaiters) — Part 6: Passenger lifts to be installed in residential buildings — Planning and selection

1 Scope and field of application

This part of ISO 4190 lays down rules relating to the planning and selection of lift installations for use in residential buildings, in order to ensure adequate service.

It permits, in particular, the number of lifts and their main characteristics to be defined at the very beginning of building design.

Three quality levels are specified for the lift service, based on 60 s, 80 s and 100 s intervals at the main floor, and designated as follows:

- programme 60;
- programme 80;
- programme 100.

This part of ISO 4190 is applicable to standardized lifts of class I for installation in residential buildings.

2 References

ISO 4190/1, *Passenger lift installations — Part 1: Lifts of classes I, II and III*.

ISO 4190/5, *Passenger lifts and service lifts — Part 5: Control devices, signals and additional fittings*.

3 Definitions

For the purpose of this part of ISO 4190, the definitions given in ISO 4190/1 and ISO 4190/5, together with the following, apply.

3.1 main floor: Level to which pedestrians normally have access from street level.

If such access to the same lift exists at different levels, the main floor is then the lowest level.

3.2 interval at the main floor: The average time, at the main floor, between two consecutive departures of a car.

3.3 handling capacity (of a lift or of a group of lifts): Percentage of the building population that the lift or the group of lifts can transport within a given period of time.

3.4 theoretical time of travel: Theoretical time for the car to make the full journey between the two extreme levels (travel divided by the rated speed).

3.5 up-peak (incoming traffic): Period of the day during which the lifts are used exclusively for the transportation of persons from the main floor to upper floors.

4 General rules

4.1 Number of lifts and their characteristics

It is recommended that lift installations be provided in residential buildings having more than three levels above the main floor or if the distance between the main floor and the floor of the highest apartment is greater than 8 m.

The number of lifts and their characteristics should be determined using the diagrams given in annexes A to F. These diagrams have been elaborated on the basis of the following criteria and those given in tables 1, 2 and 3:

- a) period of day: up-peak (incoming traffic);
- b) if only one lift is planned, its rated load has to be at least 630 kg and its rated speed at least 0,63 m/s (see ISO 4190/1, subclause 3.2.2);
- c) in each group of lifts:
 - the rated speed of all lifts has to be at least 1,00 m/s,
 - the rated load of at least one lift has to be 1 000 kg.

Table 1

Time, s	Programme		
	60	80	100
Maximum interval at the main floor	60 s	80 s	100 s
Maximum theoretical time of travel	20 s	30 s	40 s
Handling capacity over 5 min	7,5 % of the population residing above the main floor		
At least two lifts if the number of floors above the main floor is greater than	6	7	8

Table 2

Distance between two consecutive floors, m	2,8 ± 0,20		
	400	630	1 000
Rated load, kg	400	630	1 000
Number of passengers in the car when leaving the main floor (approximately 80 % of the rated load):	5	7	11
Time loss per passenger (loading + unloading), s	3,5	3,5	3,5

Table 3

Rated speed, m/s	0,63	1,0	1,6	2,5
Sum of time losses per stop, s	9,5	10,0	9,5	9,5

4.2 Arrangement of lifts

The lifts should preferably be arranged side by side. Lifts arranged facing each other or at right angles are far less satisfactory since circulation of users will be impaired. Back to back arrangements are totally unsuitable as they prevent the use of the appropriate control system.

4.3 Control system

The diagrams given in annexes A to F can be used only in conjunction with the collective controls defined in ISO 4190/5.

4.4 Type of doors

The diagrams given in annexes A to F can be used only in conjunction with automatic car and landing doors.

5 Selection of programme

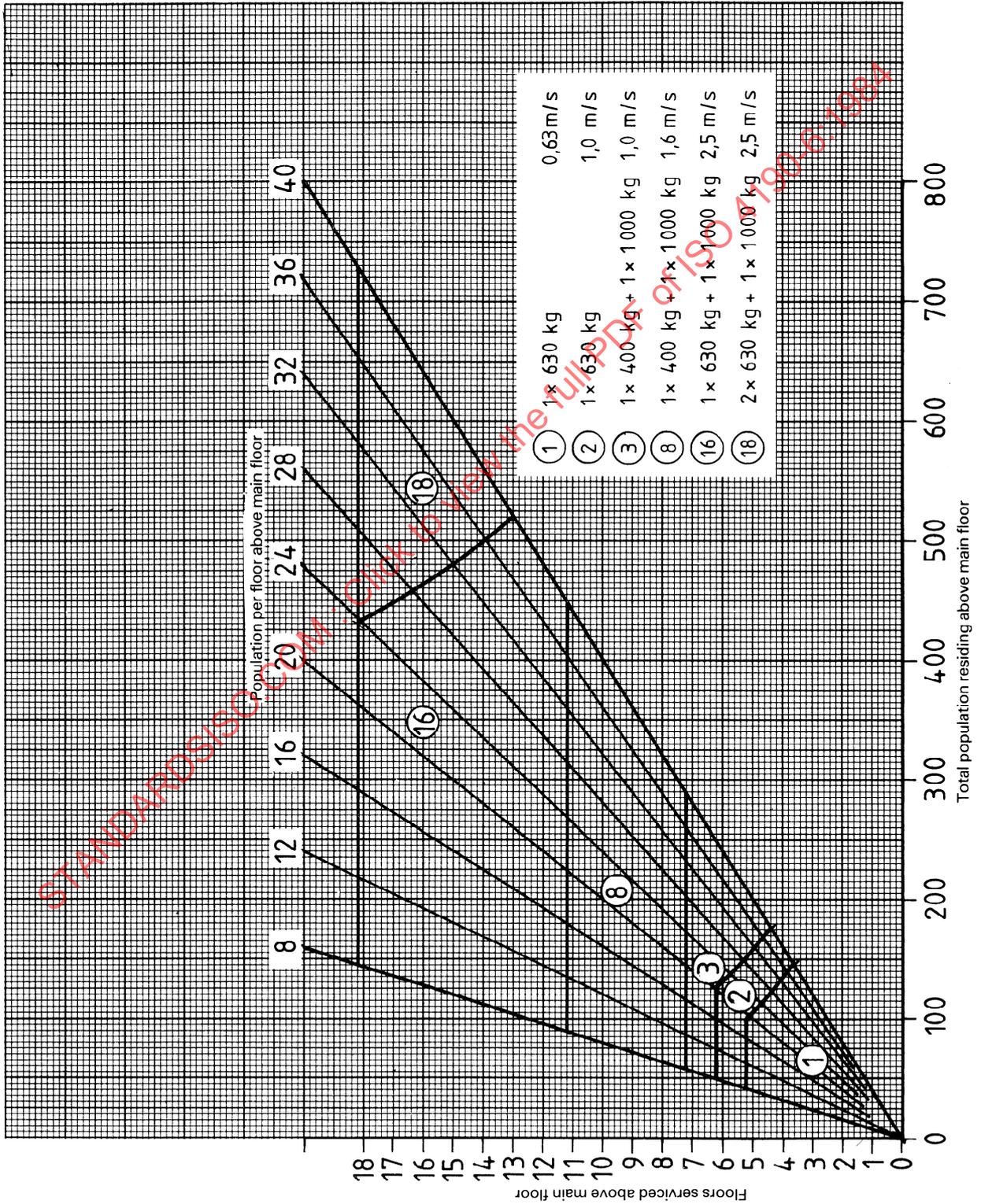
The shorter the interval at the main floor, the better is the quality of the lift service.

This interval has a significant influence on the number of lifts and their characteristics; the choice of programme, therefore, requires careful study.

For residential buildings, intervals of 60, 80 or at most 100 s, are acceptable, according to the quality level required.

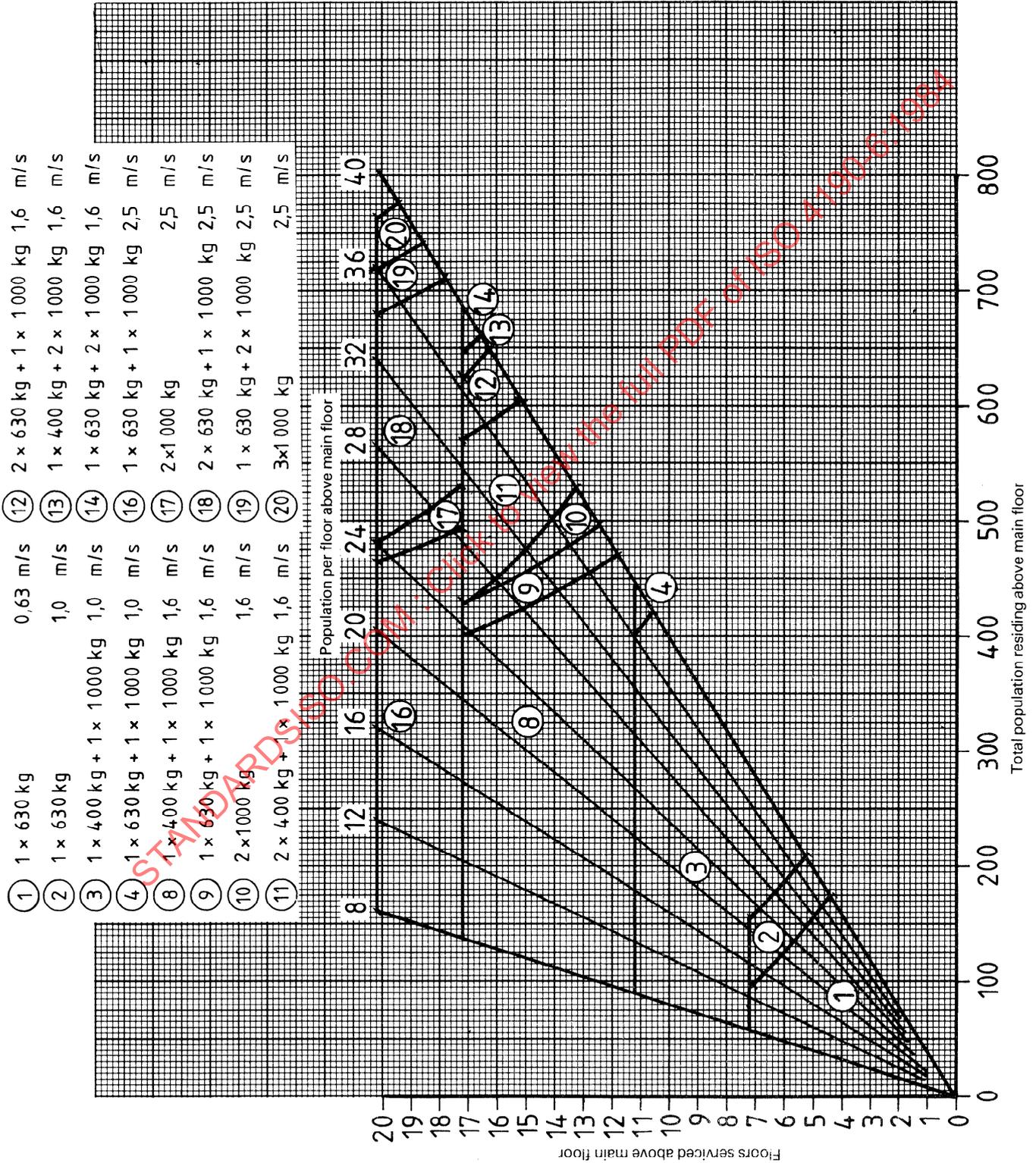
Annex A

Programme 60, without parking level



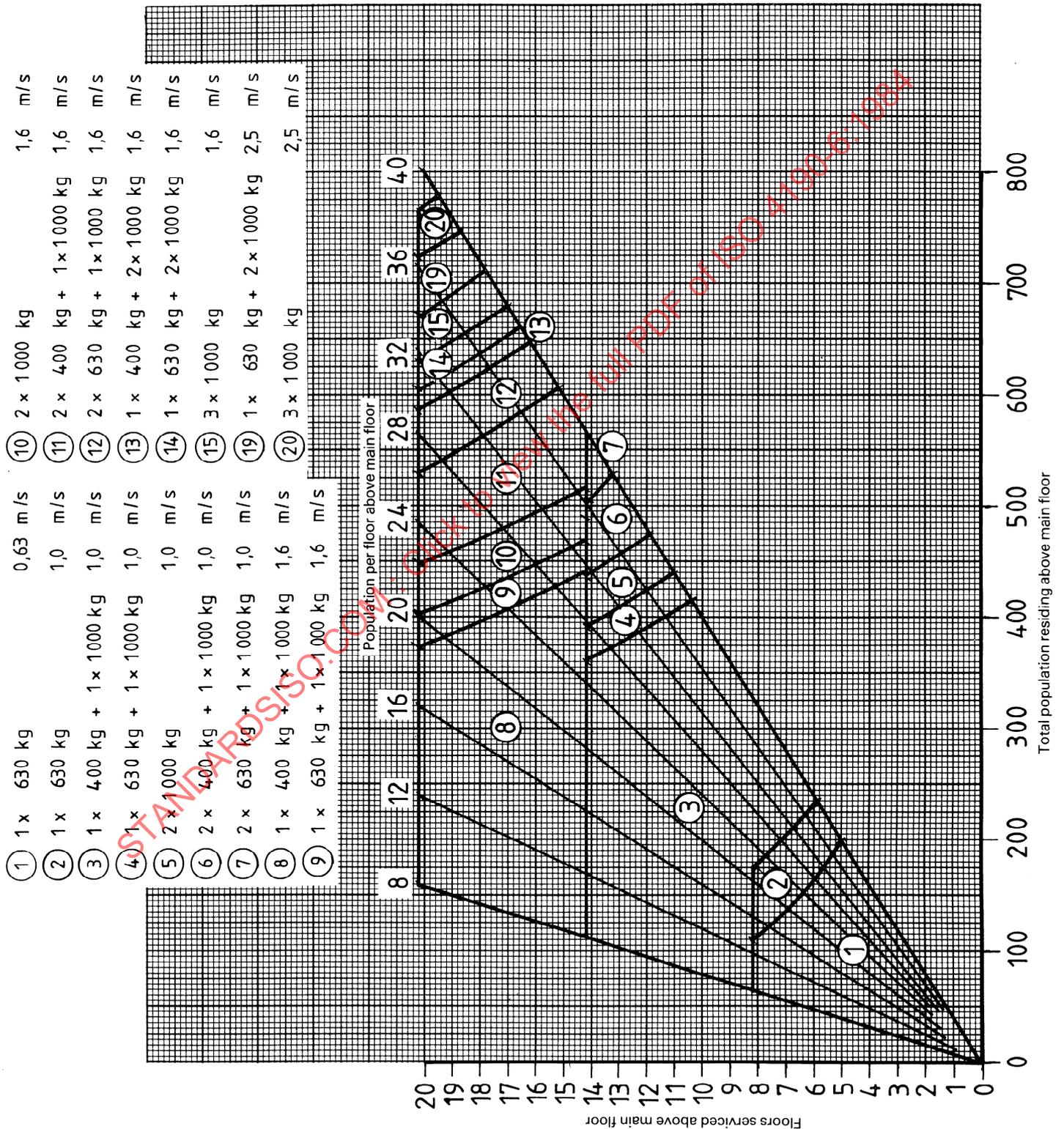
Annex B

Programme 80, without parking level



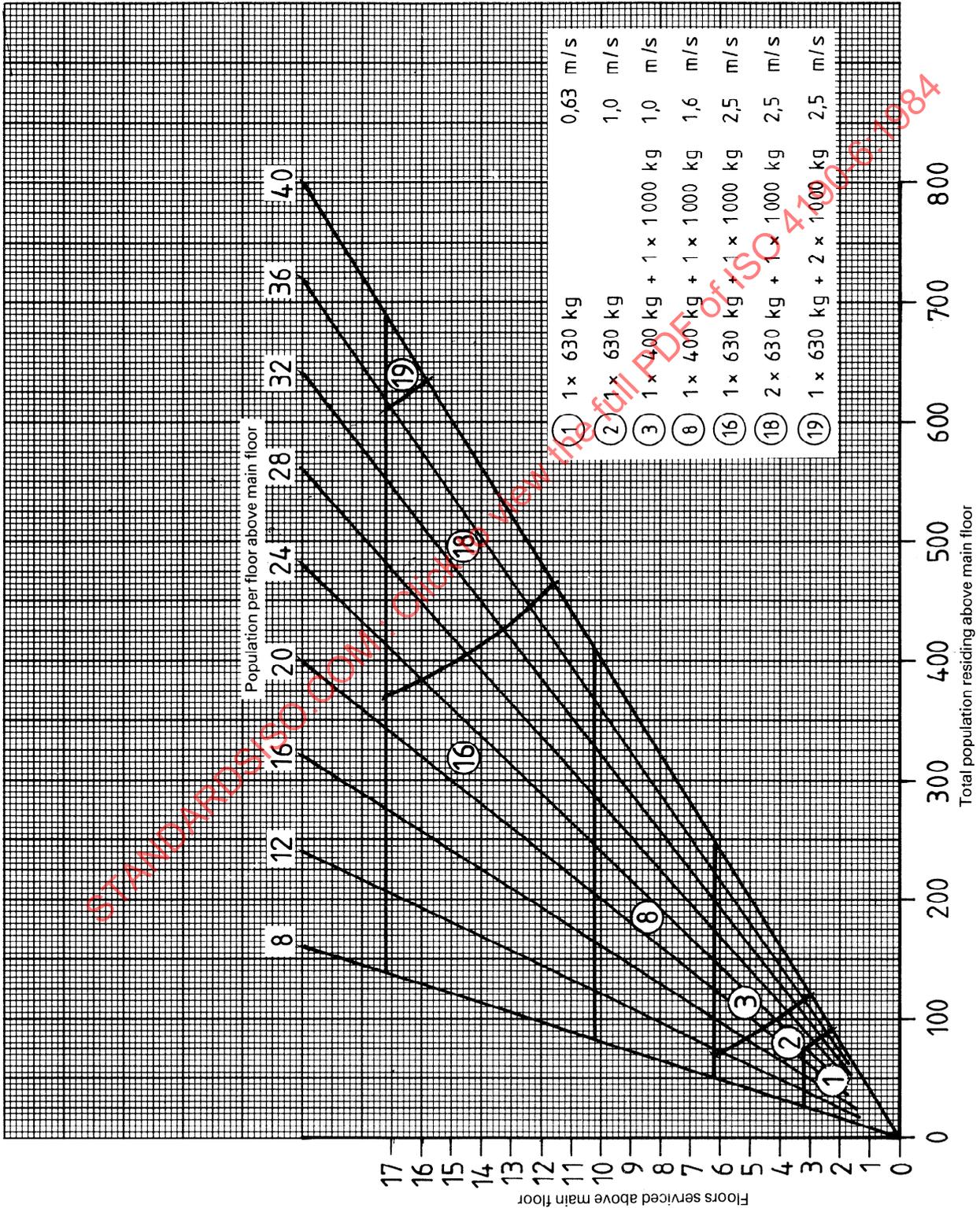
Annex C

Programme 100, without parking level



Annex D

Programme 60, with one parking level below main floor



Annex E

Programme 80, with one parking level below main floor

