Government of Canada | Gouvernement du Canada

Canadian General Standards Board | Office des normes générales du Canada

Series 4

Série des 4

WITHDRAWAL

October 2017

Selected standards in the series Textiles

These National Standards of Canada are hereby withdrawn as information contained therein may no longer represent the most current, reliable, and/or available information on these subjects.

The Standards Council of Canada requires that accredited Standards Development Organizations, such as the CGSB, regularly review a consensus Standard to determine whether to re-approve, revise or withdraw. The review cycle is normally five years from the publication date of the latest edition of the Standard. CGSB retains the right to develop new editions.

The information contained in these Standards was originally developed pursuant to a voluntary standards development initiative of the CGSB. The information contained therein may no longer represent the most current, reliable, and/or available information on these subjects. CGSB hereby disclaims any and all claims, representation or warranty of scientific validity, or technical accuracy implied or expressed respecting the information therein contained. The CGSB shall not take responsibility nor be held liable for any errors, omissions, inaccuracies or any other liabilities that may arise from the provision or subsequent use

RETRAIT

Octobre 2017

Sélection de normes de la série Textiles

Ces Normes nationales du Canada sont retirées par le présent avis car l'information contenue peut ne plus représenter l'information disponible et/ou l'information la plus actuelle ou la plus fiable à ce sujet.

Le Conseil canadien des normes exige que les organismes accrédités d'élaboration de normes, tel que l'ONGC, effectue régulièrement un examen des normes consensuelles afin de déterminer s'il y a lieu d'en renouveler l'approbation, de les réviser ou de les retirer. Le cycle d'examen d'une norme est généralement de cinq ans à partir de la date de publication de la dernière édition de celle-ci. L'ONGC se réserve le droit d'élaborer de nouvelles éditions.

L'information contenue dans ces normes a été élaborée initialement en vertu d'une initiative volontaire d'élaboration de normes de l'ONGC. Elle peut ne plus représenter l'information disponible et/ou l'information la plus actuelle ou la plus fiable à ce sujet. L'ONGC décline par la présente toute responsabilité à l'égard de toute affirmation, déclaration ou garantie de validité scientifique ou d'exactitude technique implicite ou explicite relative à l'information contenue dans ces normes. L'ONGC n'assumera aucune responsabilité et ne sera pas tenu responsable quant à toute erreur, omission, inexactitude ou autre conséquence pouvant découler de la

of such information.

Copies of withdrawn standards are available from the CGSB Sales Centre by telephone at 819-956-0425 or 1-800-665-2472, by fax at 819-956-5740, by Internet at www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html, by e-mail at ncr.CGSB-ONGC@tpsgc-pwgsc.gc.ca or by mail at Sales Centre, Canadian General Standards Board, 11 Laurier Street, Gatineau, Canada K1A 1G6.

fourniture ou de l'utilisation subséquente de cette information.

Des copies des normes retirées peuvent être obtenues auprès du Centre des ventes de l'ONGC. Il suffit d'en faire la demande par téléphone au 819-956-0425 ou 1-800-665-2472, par télécopieur au 819-956-5740, par Internet à : www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-fra.html, par courriel à ncr.CGSB-ONGC@tpsgc-pwgsc.gc.ca, ou par courrier adressé au Centre des ventes, Office des normes générales du Canada, 11, rue Laurier, Gatineau, Canada K1A 1G6.

CAN/CGSB-4.2

Textile test methods

No. 12.2-2012

Tearing strength — Trapezoid method (ICS 59.080.01)

No. 26.2-94/ISO 4920:1981 IDT

Textile fabrics — Determination of resistance to surface wetting (spray test) (ICS 59.080.30)

No. 58-2004

Dimensional Change in Domestic Laundering of Textiles (ICS 59.080.01)

No. 71-M91 / ISO/TR 8091:1983 IDT

Textiles — Twist factor related to the Tex System (ICS 59.080.01)

No. 72.1-M91 / ISO 6741-1:1989 IDT

Textiles — Fibres and yarns — Determination of commercial mass of consignments — Part 1: Mass determination and calculations (ICS 59.080.20, 59.060.01)

CAN/CGSB-4.2

Méthodes pour épreuves textiles

Nº 12.2-2012

Résistance à la déchirure — Méthode trapézoïdale (ICS 59.080.01)

Nº 26.2-94-/ISO 4920:1981 IDT

Étoffes — Détermination de la résistance au mouillage superficiel (Essai d'arrosage) (ICS 59.080.30)

Nº 58-2004

Changement dimensionnel des textiles au blanchissage domestique (ICS 59.080.01)

Nº 71-M91 / ISO/TR 8091:1983 IDT

Textiles — Facteur de torsion lié au système Tex (ICS 59.080.01)

Nº 72.1-M91 / ISO 6741-1:1989 IDT

Textiles — Fibres et fils — Détermination de la masse commerciale d'un lot — Partie 1 : Détermination de la masse et modes de calcul (ICS 59.080.20, 59.060.01)

No. 72.2-M91 / ISO 6741-2:1987 IDT

Textiles — Fibres and yarns — Determination of commercial mass of consignments — Part 2: Methods for obtaining laboratory samples (ICS 59.080.20, 59.060.01)

Nº 72.2-M91 / ISO 6741-2:1987 IDT

Textiles — Fibres et fils — Détermination de la masse commerciale d'un lot — Partie 2 : Méthodes d'obtention des échantillons pour laboratoire (ICS 59.080.20, 59.060.01)

No. 77.1-94/ ISO 4919:1978 IDT

Carpets — Determination of tuft withdrawal force (ICS 59.080.60)

Nº 77.1-94/ ISO 4919:1978 IDT

Tapis-moquettes — Détermination de la force d'arrachement de touffes (ICS 59.080.60)

CAN2-4.162-M80

Hospital Textiles — Flammability Performance Requirements (ICS 11.140)

CAN2-4.162-M80

Textiles utilisés dans les hôpitaux— Exigences de résistance à l'inflammabilité (ICS 11.140)

CAN/CGSB-4.175-M91 Part 2/ ISO 6348:1980 IDT

Textiles — Determination of mass — Vocabulary (ICS 01.040.59; 59.080.01)

CAN/CGSB-4.175-M91 Partie 2/ ISO 6348:1980 IDT

Textiles — Détermination de masse — Vocabulaire (ICS 01.040.59; 59.080.01)

Government of Canada | Gouvernement du Canada

Canadian General Standards Board | Office des normes générales du Canada

CAN/CGSB-4.2 No. 71-M91/ ISO/TR 8091:1983

Extended
April 1997
Reaffirmed
November 2012

Textile test methods

Textiles — Twist factor related to the Tex System (ISO/TR 8091:1983, IDT)

(The International Standard ISO/TR 8091:1983 is adopted without modifications (IDT) as a CGSB Standard CAN/CGSB-4.2 No. 71-M91/ISO/TR 8091:1983 and has been approved as a National Standard of Canada by the Standards Council of Canada.)

ICS 59.080.01

International Organization for Standardization

Standards Council of Canada
Conseil canadien des normes

National Standard of Canada

Canada

Experience and excellence
Expérience et excellence
CGSB ONGC

The CANADIAN GENERAL STANDARDS BOARD (CGSB), under whose auspices this National Standard of Canada has been developed is a government agency within Public Works and Government Services Canada. CGSB is engaged in the production of voluntary standards in a wide range of subject areas through the media of standards committees and the consensus process. The standards committees are composed of representatives of relevant interests including producers, consumers and other users, retailers, governments, educational institutions, technical, professional and trade societies, and research and testing organizations. Any given standard is developed on the consensus of views expressed by such representatives.

CGSB has been accredited by the Standards Council of Canada as a national standards-development organization. The standards that it develops and offers as National Standards of Canada conform to the criteria and procedures established for this purpose by the Standards Council of Canada. In addition to standards it publishes as national standards, CGSB produces standards to meet particular needs, in response to requests from a variety of sources in both the public and private sectors. Both CGSB standards and CGSB national standards are developed in conformance with the policies described in the CGSB Policy Manual for the Development and Review of Standards.

CGSB standards are subject to review and revision to ensure that they keep abreast of technological progress. Suggestions for their improvement, which are always welcome, should be brought to the notice of the standards committees concerned. Changes to standards are issued either as separate amendment sheets or in new editions of standards.

An up-to-date listing of CGSB standards, including details on latest issues and amendments, and ordering instructions, is found in the CGSB Catalogue, which is published annually and is available without charge upon request. More information is available about CGSB products and services at our Web site — www.tpsgc-pwgsc.gc.ca/ongc-cgsb.

Although the intended primary application of this standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

The testing and evaluation of a product against this standard may require the use of materials and/or equipment that could be hazardous. This document does not purport to address all the safety aspects associated with its use. Anyone using this standard has the responsibility to consult the appropriate authorities and to establish appropriate health and safety practices in conjunction with any applicable regulatory requirements prior to its use. CGSB neither assumes nor accepts any responsibility for any injury or damage that may occur during or as the result of tests, wherever performed.

Attention is drawn to the possibility that some of the elements of this Canadian standard may be the subject of patent rights. CGSB shall not be held responsible for identifying any or all such patent rights. Users of this standard are expressly advised that determination of the validity of any such patent rights is entirely their own responsibility.

Further information on CGSB and its services and standards may be obtained from:

The Manager
Standards Division
Canadian General Standards Board
Gatineau, Canada
K1A 1G6

The STANDARDS COUNCIL OF CANADA is the coordinating body of the National Standards System, a coalition of independent, autonomous organizations working towards the further development and improvement of voluntary standardization in the national interest.

The principal objects of the SCC are to foster and promote voluntary standardization as a means of advancing the national economy, benefiting the health, safety and welfare of the public, assisting and protecting the consumer, facilitating domestic and international trade, and furthering international cooperation in the field of standards.

A National Standard of Canada (NSC) is a standard prepared or reviewed by an accredited Standards Development Organization (SDO) and approved by the SCC according to the requirements of CAN-P-2. Approval does not refer to the technical content of the standard; this remains the continuing responsibility of the SDO. A NSC reflects a consensus of a number of capable individuals whose collective interests provide, to the greatest practicable extent, a balance of representation of general interests, producers, regulators, users (including consumers), and others with relevant interests, as may be appropriate to the subject in hand. It normally is a standard, which is capable of making a significant and timely contribution to the national interest.

Those who have a need to apply standards are encouraged to use NSCs. These standards are subject to periodic review. Users of NSCs are cautioned to obtain the latest edition from the SDO, which publishes the standard.

The responsibility for approving standards as National Standards of Canada rests with the:

Standards Council of Canada
200-270 Albert Street
Ottawa, Ontario
K1P 6N7

NATIONAL STANDARD OF CANADA

CAN/CGSB-4.2
No. 71-M91/
ISO/TR 8091:1983

Extended
April 1997
Reaffirmed
November 2012

Textile test methods
Textiles — Twist factor related to the Tex System
(ISO/TR 8091:1983, IDT)

(The International Standard ISO/TR 8091:1983 is adopted without modifications (IDT) as a CGSB Standard CAN/CGSB-4.2 No. 71-M91/ISO/TR 8091:1983 and has been approved as a National Standard of Canada by the Standards Council of Canada.)

CETTE NORME NATIONALE DU CANADA EST DISPONIBLE EN VERSIONS FRANÇAISE ET ANGLAISE.

Prepared by the

International Organization for Standardization

Reviewed by the

Canadian General Standards Board

Approved by the

Standards Council of Canada

Published June 1991 by the
Canadian General Standards Board
Gatineau, Canada K1A 1G6

CANADIAN GENERAL STANDARDS BOARD

Committee on Textile Test Methods and Terminology

(Voting membership at date of reaffirmation)

General Interest Category

Batcheller, J.	University of Alberta
Carrick, D.	Consultant
Davie, N.	Consultant
Liu, S.	University of Manitoba
Man, T.M.	Consultant
Tait, C.	National Defence/DSSPM

Producer Category

Adam, C.	PGI/Difco Performance Fabrics Inc.
Bowen, D.	DuPont Protection Technologies
Lawson, L.	Walls Apparel Canada Inc.
Leonard, D.	Invista (Canada) Co.
Schumann, E.	Lincoln Fabrics Ltd.
Zukowsky, D.	Marv Holland Apparel Ltd.

Regulator Category

Andersson, C.	Health Canada

User Category

Bourget, S.	National Defence/QETE
Hong, T.	Exova Group Ltd.
Izquierdo, V.	Textile Technologies Centre
Litva (Scalzo), M.	Canada Border Services Agency
MacLeod, J.	Public Works and Government Services Canada
Sirimanna, A.	Sears Canada Inc.
Tebbs, C.	International Drycleaners Congress

Secretary (non-voting)

Grabowski, M.	Canadian General Standards Board

Extended
April 1997
Reaffirmed
November 2012

Preface to the National Standard of Canada

This National Standard of Canada has been extended and reaffirmed by the CGSB Committee on Textile Test Methods and Terminology. It is identical in content and in layout with Technical Report ISO/TR 8091, Textiles — Twist factor related to the Tex System, published 1983-02-15 by the International Organization for Standardization (ISO), and is reprinted with the permission of ISO. The international report was reviewed by the CGSB committee to determine its suitability for Canadian use. It was agreed to use it in total, without editorial changes.

Throughout this standard, the words “National Standard of Canada” are to be understood as replacing the words “Technical Report” wherever they appear.

Some terminology and conventions are not identical to those used in other test methods within CAN/CGSB-4.2 — Textile Test Methods. For example, the comma is used throughout this standard as a decimal marker rather than the point.

The referenced ISO 1000 and ISO 1144 standards have no Canadian equivalent.

The testing and evaluation of a product against this method may require the use of materials and equipment that could be hazardous. This document does not purport to address all the safety aspects associated with its use. Anyone using this method has the responsibility to consult the appropriate authorities and to establish appropriate health and safety practices in conjunction with any applicable regulatory requirements prior to its use. CGSB neither assumes nor accepts any responsibility for any injury or damage that may occur during or as the result of tests, wherever performed.

The CGSB National Standards of Canada may be obtained from the Canadian General Standards Board, Sales Centre, Gatineau, Canada K1A 1G6. Telephone 819-956-0425 or 1-800-665-2472. Fax 819-956-5740.

The International Standards may be obtained from IHS Canada, 1 Antares Drive, Suite 200, Ottawa, Ontario K2E 8C4. Telephone 613-237-4250 or 1-800-267-8220. Fax 613-237-4251.

TECHNICAL REPORT ISO/TR 8091-1983 (E)

Published 1983-02-15

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

Textiles — Twist factor related to the Tex System

0 Introduction

Twist factor is a measure of the spiralling orientation of the fibres in a spun yarn or of the filaments in a filament yarn. It links together the two other characteristics of a yarn, namely the linear density and the twist. Apart from the linear density and twist, yarns or rovings composed of the same fibres and having the same twist factor have the same positioning of the fibres and consequently a certain similarity of structure.

The numerical value of the twist factor is dependent on the yarn linear density system, the chosen unit for expressing linear density in that system and the chosen length across which the twist is measured. The Tex System, with its four recommended units, has been adopted internationally (see ISO 1144). For length, the SI units given in ISO 1000 should be used. Consequently twist factor, which is frequently used in the textile industry, should be adapted to these units.

The equation for calculating α_t in clause 4 of this Technical Report is the preferred system and it is hoped that the second equation, for calculating α_m, will only be used where necessary as an interim measure until the α_t equation can be fully implemented. It is felt that full implementation of the α_t system internationally would be of considerable benefit to the industry.

Since the meeting of ISO/TC 38/SC 4, *Implementation of the Tex System*, in Timperley in 1967, the sub-committee have tried to find an acceptable formula for this parameter.

During the technical discussions it was found that fibre density was important when comparing the positioning of fibres in blended yarns. However, for routine purposes, the introduction of fibre density would make the practical use of twist factor somewhat complicated. It was accepted, however, that for scientific use and for the purposes of comparing yarns composed of different natural and synthetic fibres, the inclusion of fibre density was of interest. At that time no agreement could be reached on a formula for including fibre density.

Several enquiries were made amongst member bodies but these did not indicate a preference for any of the proposed formulae. From amongst the many proposals, two possible solutions remained. The first was based on the basic unit tex and resulted in a twist factor whose numerical value was approximately ten times that of a twist factor based on the traditional English cotton count system (N_{ec}). The numerical value obtained using the second formula was equal to that obtained using the metric count system (N_m). It was felt that this relationship between the numerical values would be advantageous during the transition period until the Tex System had been fully implemented.

At the eighth meeting of ISO/TC 38 in 1980, it was decided that a Technical Report, Type 2, should be prepared which summarized the current situation.

1 Scope and field of application

This Technical Report gives equations for the calculation of twist factors in SI units and conversion tables with which twist factors expressed in other unit systems can be transformed into SI units. It is applicable to single twisted yarns, folded yarns and cabled yarns.

UDC 677.017.333 **Ref. No. : ISO/TR 8091-1983 (E)**

Descriptors : textiles, computation, torsion angle.

Printed in Switzerland

Price based on 4 pages

2 References

ISO 1000, *SI units and recommendations for the use of their multiples and of certain other units.*

ISO 1144, *Textiles — Universal system for designating linear density (Tex System).*

3 Definition

twist factor : A measure of the spiralling orientation of the fibres in a spun yarn or of the filaments in a filament yarn. It is related to the angle which fibres on the surface of the yarn make with the axis of the yarn. Provided they are of the same material, the fibres or filaments in yarns with similar twist factors will be similarly orientated with respect to the yarn axis.

4 Twist factor in the Tex System

The twist factor in the Tex System expresses the spiralling orientation in terms of the twist in the yarn, in turns per metre, and the linear density of the yarn, in a unit of the Tex System.

For calculating the twist factor, one of the following two different equations should be used :

$$\alpha_t = \frac{T}{100}\sqrt{\varrho_l}$$

$$\alpha_m = \frac{T}{100}\sqrt{\varrho_l'}$$

where

α_t (alpha tex) is the twist factor (torsion angle), expressed in the Tex System;

α_m (alpha metric) is the twist factor (torsion angle), expressed in the metric system;

T is the twist, expressed in turns per metre;

ϱ_l is the linear density, in tex;

ϱ_l' is the linear density, in decitex.

NOTES

1 It is essential that any expression of the value of the twist factor be accompanied by a statement of the equation chosen.

2 The equation for calculating α_t is the preferred system. The equation for calculating α_m should only be used where necessary as an interim measure until the α_t equation can be fully implemented.

5 Relationship between α_t and α_m

$$\alpha_t = \frac{\alpha_m}{\sqrt{10}} = 0{,}316\,23\,\alpha_m$$

$$\alpha_m = \alpha_t \times \sqrt{10} = 3{,}162\,3\,\alpha_t$$

6 Conversion factors

Yarn count systems

Tex System	English cotton system	Metric system	Tex System
tex	N_{ec}	N_m	dtex
α_t	9.567 3 α_{el}	0,316 3 α_m	0,316 3 α_m
0,104 52 α_t	α_{el}	0,033 05 α_m	0,033 05 α_m
3,162 3 α_t	30.255 α_{el}	α_m	α_m

7 Conversion table for turns per inch into turns per metre

Turns		Turns		Turns		Turns	
per inch	per metre	per inch	per metre	per inch	per metre	per inch	per metre
1	39,37	1,85	72,83	3,2	126,0	5,6	220,5
1,016	40	1,880	74	3,3	129,9	5,715	225
1,04	40,94	1,9	74,80	3,302	130	5,8	228,3
1,041	41	1,930	76	3,4	133,9	5,842	230
1,067	42	1,95	76,77	3,429	135	5,969	235
1,08	42,52	1,981	78	3,5	137,8	6	236,2
1,082	43	2	78,74	3,556	140	6,096	240
1,118	44	2,032	80	3,6	141,7	6,2	244,1
1,12	44,09	2,05	80,71	3,683	145	6,223	245
1,143	45	2,083	82	3,7	145,7	6,350	250
1,16	45,67	2,1	82,68	3,8	149,6	6,4	252,0
1,168	46	2,134	84	3,810	150	6,6	259,8
1,194	47	2,15	84,65	3,9	153,5	6,604	260
1,2	47,24	2,184	86	3,937	155	6,8	267,7
1,219	48	2,2	86,61	4	157,5	6,858	270
1,245	49	2,235	88	4,064	160	7	275,6
1,25	49,21	2,25	88,58	4,1	161,4	7,112	280
1,270	50	2,286	90	4,191	165	7,2	283,5
1,3	51,18	2,3	90,55	4,2	165,4	7,366	290
1,321	52	2,337	92	4,3	169,3	7,4	291,3
1,35	53,15	2,35	92,52	4,318	170	7,6	299,2
1,372	54	2,388	94	4,4	173,2	7,620	300
1,4	55,12	2,4	94,50	4,445	175	7,8	307,1
1,422	56	2,438	96	4,5	177,2	7,874	310
1,45	57,09	2,45	96,46	4,572	180	8	315,0
1,473	58	2,489	98	4,6	181,1	8,128	320
1,5	59,06	2,5	98,43	4,699	185	8,2	322,8
1,524	60	2,540	100	4,7	185,0	8,382	330
1,55	61,02	2,6	102,4	4,8	189,0	8,4	330,7
1,575	62	2,642	104	4,826	190	8,6	338,6
1,6	62,99	2,7	106,3	4,9	192,9	8,636	340
1,626	64	2,743	108	4,953	195	8,8	346,5
1,65	64,96	2,8	110,2	5	196,9	8,890	350
1,676	66	2,845	112	5,080	200	9	354,3
1,7	66,93	2,9	114,2	5,2	204,7	9,144	360
1,727	68	2,946	116	5,207	205	9,2	362,2
1,75	68,90	3	118,1	5,334	210	9,398	370
1,778	70	3,048	120	5,4	212,6	9,4	370,1
1,8	70,87	3,1	122,0	5,461	215	9,6	378,0
1,829	72	3,175	125	5,588	220	9,652	380
						9,8	385,8
						9,905	390
						10	393,7

8 Conversion table for twist factors

α_t	α_{el}	α_m	α_t	α_{el}	α_m	α_t	α_{el}	α_m	α_t	α_{el}	α_m
4,975	0.52	—	8,8	0.919 8	27,83	15,79	1.65	—	27,75	2.9	—
5	0.522 6	15,81	8,802	0.92	—	15,81	—	50	27,83	—	88
5,060	—	16	8,854	—	28	16	1.672	50,60	28	2.927	88,54
5,166	0.54	—	8,993	0.94	—	16,26	1.7	—	28,46	—	90
5,2	0.543 5	16,44	9	0.940 7	28,46	16,44	—	52	28,70	3	—
5,218	—	16,5	9,171	—	29	16,5	1.725	52,18	29	3.031	91,71
5,358	0.56	—	9,185	0.96	—	16,74	1.75	—	29,09	—	92
5,376	—	17	9,2	0.961 6	29,09	17	1.777	53,76	29,66	3.1	—
5,4	0.564 4	17,08	9,376	0.98	—	17,08	—	54	29,73	—	94
5,534	—	17,5	9,4	0.982 5	29,73	17,22	1.8	—	30	3.136	94,87
5,549	0.58	—	9,487	—	30	17,5	1.829	55,34	30,36	—	96
5,6	0.585 3	17,71	9,567	1	—	17,70	1.85	56	30,62	3.2	—
5,692	—	18	9,6	1.003	30,36	18	1.881	56,92	31	3.240	98
5,740	0.6	—	9,8	1.024	30,99	18,18	1.9	—	31,57	3.3	—
5,8	0.606 2	18,34	9,803	—	31	18,34	—	58	31,62	—	100
5,850	—	18,5	9,950	1.04	—	18,5	1.934	58,50	32	3.345	101,2
5,932	0.62	—	10	1.045	31,62	18,66	1.95	—	32,53	3.4	—
6	0.627 1	18,97	10,12	—	32	18,97	—	60	32,89	—	104
6,008	—	19	10,33	1.08	—	19	1.986	60,08	33	3.449	104,4
6,123	0.64	—	10,4	1.087	32,89	19,13	2	—	33,49	3.5	—
6,166	—	19,5	10,44	—	33	19,5	2.038	61,65	34	3.554	107,5
6,2	0.648 0	19,61	10,72	1.12	—	19,61	2.05	62	34,15	—	108
6,314	0.66	—	10,75	—	34	20	2.090	63,25	34,44	3.6	—
6,325	—	20	10,8	1.129	34,15	20,09	2.1	—	35	3.658	110,7
6,4	0.668 9	20,24	11,07	—	35	20,24	—	64	36,41	3.7	112
6,483	—	20,5	11,10	1.16	—	20,5	2.143	64,83	36	3.763	113,8
6,506	0.68	—	11,2	1.170	35,42	20,57	2.15	—	35,36	3.8	—
6,6	0.689 8	20,87	11,38	—	36	20,87	—	66	36,68	—	116
6,641	—	21	11,48	1.2	—	21	2.195	66,41	37	3.867	117,0
6,697	0.7	—	11,6	1.212	36,68	21,05	2.2	—	37,31	3.9	—
6,8	0.710 7	21,5	11,70	—	37	21,5	2.247	68	37,94	—	120
6,888	0.72	—	11,96	1.25	—	21,53	2.25	—	38	3.972	120,2
6,957	—	22	12	1.254	37,95	22	2.3	69,57	38,27	4	—
7	0.731 6	22,14	12,02	—	38	22,14	—	70	39	4.076	123,3
7,080	0.74	—	12,33	—	39	22,48	2.35	—	39,23	4.1	—
7,115	—	22,5	12,44	1.3	—	22,5	2.352	71,15	39,53	—	125
7,2	0.752 5	22,77	12,5	1.307	39,53	22,77	—	72	40	4.181	126,5
7,271	0.76	—	12,65	—	40	22,96	2.4	—	40,18	4.2	—
7,273	—	23	12,92	1.35	—	23	2.404	72,73	41	4.285	129,7
7,4	0.773 4	23,40	12,97	—	41	23,40	—	74	41,12	4.3	130
7,431	—	23,5	13	1.359	41,11	23,44	2.45	—	42	4.390	132,8
7,462	0.78	—	13,28	—	42	23,5	2.456	74,31	42,10	4.4	—
7,590	—	24	13,39	1.4	—	23,92	2.5	—	42,69	—	135
7,6	0.794 4	24,03	13,5	1.411	42,69	24	2.508	75,89	43	4.494	136,0
7,654	0.8	—	13,60	—	43	24,03	—	76	43,05	4.5	—
7,748	—	24,5	13,87	1.45	—	24,5	2.561	77,48	44	4.6	139,1
7,8	0.815 3	24,67	13,91	—	44	24,67	—	78	44,27	—	140
7,845	0.82	—	14	1.463	44,27	24,87	2.6	—	44,97	4.7	—
7,906	—	25	14,23	—	45	25	2.613	79,06	45	4.703	142,3
8	0.836 2	25,30	14,35	1.5	—	25,30	—	80	45,85	—	145
8,037	0.84	—	14,5	1.516	45,85	25,83	2.7	—	45,92	4.8	—
8,2	0.857 1	25,93	14,55	—	46	25,93	—	82	46	4.808	145,5
8,222	—	26	14,83	1.55	—	26	2.718	82,22	46,88	4.9	—
8,228	0.86	—	14,86	—	47	26,56	—	84	47	4.912	148,6
8,4	0.878 0	26,56	15	1.568	47,43	26,79	2.8	—	47,43	—	150
8,419	0.88	—	15,18	—	48	27	2.822	85,38	47,84	5	—
8,538	—	27	15,31	1.6	—	27,20	—	86	48	5.017	151,8
8,6	0.898 9	27,20	15,5	1.620	49				49	5.121	155
8,611	0.9	—							49,75	5.2	—
									50,0	5.226	158,1
									50,60	—	160