

Guidelines for Quality, Cost-Effective Documentation



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Introduction

The Brandon Group (TBG) Incorporated has always strived to assist our clients in creating the highest quality documentation in the most cost effective manner. To help both our current and future clients achieve these goals, the management and staff of TBG have developed this manual, ***GUIDELINES FOR QUALITY, COST-EFFECTIVE DOCUMENTATION***. These ***GUIDELINES*** are based on our years of experience and the thousands of pages of documentation we have helped create.



Pooling our professional experience, education, diverse backgrounds, management skills, and (in some cases) just plain common sense, we have held numerous brain storming sessions. During these sessions, we attempted to identify exactly what has made projects flow smoothly from start to finish and helped to produce a quality final product. We also attempted to identify the types of problems and unforeseen situations that can cause “road blocks” that effect the quality, time frame, and final cost of projects.

The sections contained in these **GUIDELINES** address both the good and bad characteristics / processes / procedures identified during our brain storming sessions and include:

- ⊕ **ways to insure the highest quality documentation for the lowest possible cost;**
- ⊕ **ways to avoid, whenever possible, problems that can increase the chances of unnecessary work, missed project deadlines, and redundant effort; and**
- ⊕ **suggested procedures that we believe will help guarantee a successful, cost-effective project that meets the highest quality standards.**

To end this Introduction, I would like to offer three words to remember.

Planning: *The team leaders must have a plan for the project dictated by the needs of the project and scheduled product release.*

Forethought: *Each project team member must know what is expected of them and do whatever is necessary to complete their part of the project in a timely manner.*

Execution: *If each project team member completes their assignment(s), the documentation project will be a success.*

As always, we are constantly looking for ways to improve our services. In doing so, we appreciate the comments and ideas of all our clients. If you have any suggestions on how we can improve, change, or expand these **GUIDELINES** to make it more useful to you, or if you have suggestions to make the procedures detailed within more effective, we welcome your input.

John P. Fullen
President
The Brandon Group, Inc.

Guidelines

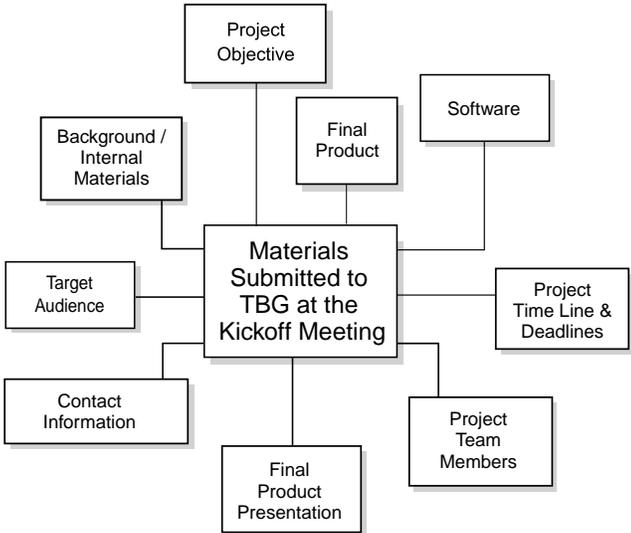
Notes

I. Project Kickoff

The number one key to ensuring a successful beginning to a documentation project is a well planned and productive project kickoff meeting. At this time, the staff of The Brandon Group (TBG) Incorporated will meet with the client project team members and collect all the most up-to-date materials currently available.

Note: Based on our past experience, most clients have the internal capabilities to efficiently prepare for a project kickoff meeting. However, if a client is new to this process, or is unsure how to proceed, TBG can assist with the preparations for the kickoff meeting.

While we understand that it may not be possible to have everything in its final form, it is important that all supplied materials are as close to final as possible. If you are aware that certain aspects of the product are in a state of change, these aspects **must** be identified so the appropriate measures can be taken to ensure that only preliminary, necessary work is performed on those aspects.



Overview of the Types of Materials to be Supplied to TBG

The following is a list of the typical types of materials that should be supplied to TBG at the kickoff meeting to ensure a successful start to the project. Also, please **refer to and use** the Pre-Kickoff Meeting Check List, containing these same items, found in the Appendix of these **GUIDELINES**.

Materials / Information Supplied to TBG

- ⊗ state the project objective – what is the purpose / goal for the project;
- ⊗ specify the exact target audience – who will be using the end product;
- ⊗ supply the product to be documented and all support materials / hardware (i.e.: cables, connectors, accessories, sensors, existing documentation / marketing materials, etc.);
- ⊗ supply any software applicable to the product;
- ⊗ supply any background / internal materials / documentation containing information about the product (i.e.: development / engineering documentation, drawings, graphics, photos, flow diagrams, block diagrams, schematics, logic diagrams, etc.);
- ⊗ supply the identity and contact information for each project team member (name, title, team function, phone, fax, e-mail address, etc.) who will be working on the project (i.e.: project engineers, technical service personnel, programmers, draftsmen, support personnel, etc.) and what role each will play in the project;
- ⊗ identify the project team members who will be reviewing project materials and those who will issue final approval on materials submitted (i.e.: project managers, lead project engineers, team leaders, representatives from associated divisions - legal, quality control., etc.);
- ⊗ review and approve the proposed project time line and deadlines for submission of materials for review and final approval; and
- ⊗ decide on final product presentation (i.e.: printed manual, electronic distribution via CD, Internet, or Intranet, etc.)

Notes

Note: This list was developed to fit all types of documentation projects (a device, software program, marketing piece, etc.). Therefore, some of the items listed may not pertain to a particular project.

Note: Please be aware that any Cost Estimate submitted for the project was developed based on discussions held between the client and TBG representatives. During those discussions, most if not all of the above points were addressed. Any change from what was discussed to what is decided in the project kickoff meeting will have a direct effect on the final project cost.

Initial Cost Estimates are created with the assumptions that all project conditions will be ideal, and that all materials supplied by the client are accurate and reflect the final product. All material must be provided to TBG in a timely manner. If, during the course of the project, materials are not provided to TBG on time and / or the supplied information requires continuous change, the final cost of the project will be directly effected.

II. Project Procedure

After the materials / information are gathered and decisions are made at the kickoff meeting, The Brandon Group (TBG) Incorporated will begin working on the project. Our standard method is to begin with the sections that demand the most work or require the most review by the client and create the “Draft Text”. However, if the product or required source information could not be provided in the final form at the kickoff meeting, TBG will work on sections that the supplied materials allow. As draft text is being created, work will also be performed on any necessary document design (DTP activities), graphic creation / modification, support illustration creation, etc.

In a typical project that includes the generation of original text and document design & layout, TBG will usually provide five (5) levels of submission for client review:

1. **Draft Text;**
2. **Final Text;**
3. **Draft Graphics and Support Illustrations;**
4. **Draft Layout; and**
5. **Final Document Layout.**

These submissions for review allow us to receive client feedback throughout the project and to make any necessary or desired changes to the document.

The most important stages of client review are all

DRAFT

submissions and the

FINAL TEXT.

Note: In the case of Technical Service manuals, the first draft submission usually consists of a flow chart showing the logical progression of dismantling procedures and a parts list identifying the replaceable components. This submission is, without doubt, the most important aspect of the project since all repair and replacement procedures, as well as their order, are dependent on these items.

Changes, even major ones, at the draft and final text stages are the most productive and cost effective since final layout work has not started. Changes to components, part numbers, setup / startup, procedures, etc. can be easily made at these stages.

If a photo shoot or screen captures are required for the project, they should occur **AFTER** all final text has been approved and the product is in its final state. Conducting a photo shoot or capturing screens before a product is identified as final could lead to a great deal of extra expense and duplicated / wasted effort.

After client approval is given to final text submissions, the project is ready to move into the draft layout (draft DTP) stage. At this point all information should be complete and accurate so we can begin combining the final text, graphics, illustrations, photos, etc., and move forward to complete the project.



Major changes made after layout has begun WILL DRAMATICALLY INCREASE THE PROJECT COSTS AND COULD CAUSE PROJECT DEADLINES TO BE MISSED. Changes to the product or source materials / information after layout has been performed take considerably more time to redocument than changes at the draft and final text stages.

Please refer to Sections III and IV for reviewing strategies.

III. Client Review of Materials

Even though we try to internally review all materials at least twice before submission, thorough client review is a must to insure accurate information. When we submit materials for your review, we will provide a sufficient number of copies for distribution to the appropriate team members. In addition, we will identify exactly what form the submission is in (draft, final text, draft layout, etc.).

When reviewing the document, be sure to carefully check and verify all content, procedures, logical progression, instructions, etc., as well as any errors in keystroking, spacing, numbering, titles, layout, graphics, and consistency. Careful review by all appropriate team members will help to ensure the most accurate documentation.

Reviewed and marked-up materials can be returned to The Brandon Group (TBG) Incorporated in the form most advantageous to the client. All copies can be returned or, as some of our clients find beneficial, the project manager can review all mark-ups and roll the required changes into one copy. We strongly suggest that the client keep a copy of all reviewed materials returned to TBG.

Section IV provides guidelines for review, proofreading, and copyediting that you may find useful.

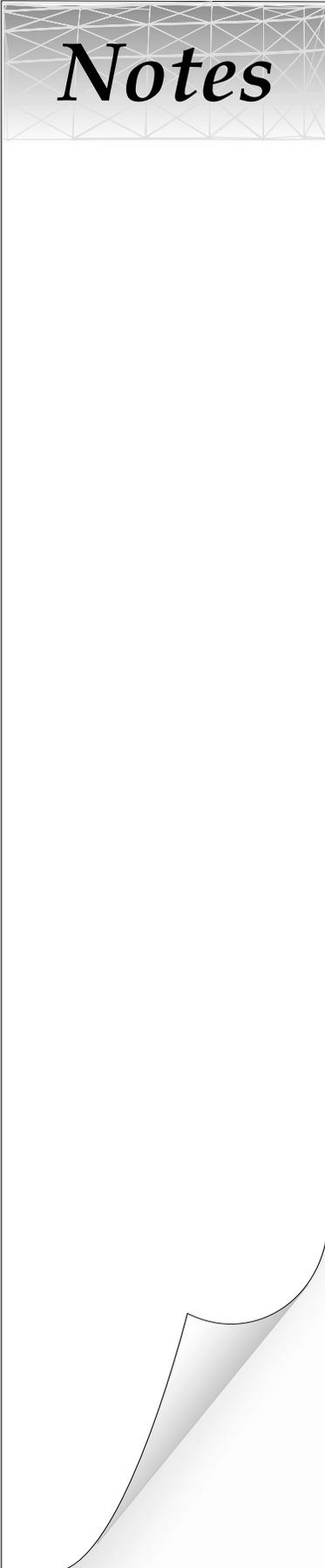


IV. Proofreading / Copyediting Marks

All The Brandon Group (TBG) Incorporated staff members are familiar with industry standard Proofreading / Copyediting Marks. However, our experience has shown that most people not directly involved with professional writing and editing have limited knowledge of these marks. We DO NOT expect our clients to use these marks. However, we have included a copy of these marks in the Appendix of these **GUIDELINES** for your reference.

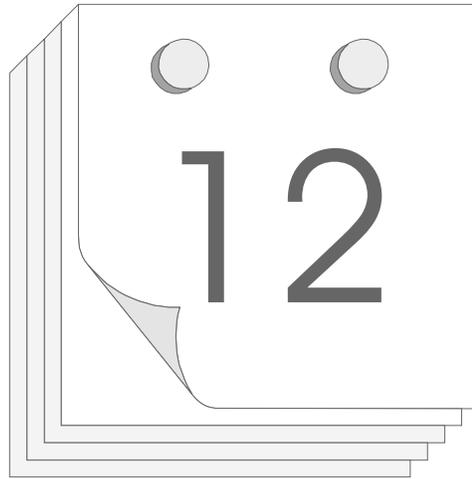
When submitting draft material, we try to leave sufficient “white space” for client mark-ups. Also feel free to use the back of each page if extensive changes or additional information is needed. All we request is that all mark-ups are made legibly to reduce the chance of confusion or misunderstanding.

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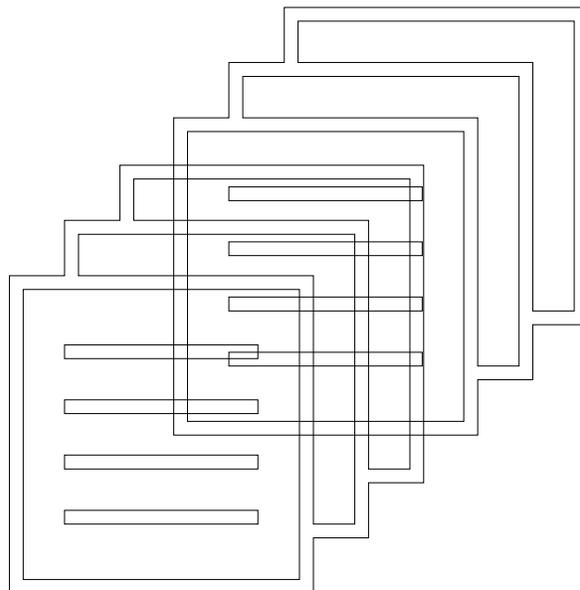


V. Returning Reviewed Materials

As you review and mark-up the submitted materials, be sure to keep in mind that the materials must be returned to The Brandon Group (TBG) Incorporated so that we may make the desired corrections and still stay within project time lines. Any delay in the return of reviewed materials will delay our next submission for your approval. We strongly suggest that when materials are distributed for review, the client project manager set a deadline for review completion - “This must be reviewed and returned to me within two (2) days” - for example.



When returning the materials, all appropriate team members should fill out and sign the Final Approval Form by checking the appropriate boxes. (A copy of the Final Approval Form is contained in the Appendix of these **GUIDELINES**.) This allows TBG to be sure that all materials have been reviewed and / or approved by the appropriate project team personnel and allows the client to ensure that all appropriate team members have completed their review.



VI. Open Communication

Every project has problems or questions that need to be dealt with on a daily basis. Therefore, The Brandon Group (TBG) Incorporated always identifies a TBG Project Manager for each project. We strongly recommend that the client do the same.

Our experience has shown that having identified project managers on both sides helps to keep the project flowing smoothly. It is important to keep each other informed of schedules and how they can be reached (via phone, personal meeting, e-mail, or fax) even while traveling. This enables questions and concerns to be immediately addressed and makes sure all deadlines are met. Furthermore, it enables the client to have control of the project at all times.

Having identified project managers helps eliminate any discrepancies or contradictions that can arise when too many people are involved and exchanging information.



Notes

VII. Final Product

All the decision making and effort to this point has been with “creating” all necessary materials to produce a final product. During the kickoff meeting, the method and form of the “final product production” was determined. All The Brandon Group (TBG) Incorporated efforts since that point have been to successfully complete the project and present the client with the necessary files / hard copy for final production.

At the end of the project, all project files and materials are available to the client. Some clients only want what is necessary to produce the final form. Other clients want all copies of all project materials and files. The decision is yours.

TBG will, unless expressly stated otherwise in writing by the clients, archive all originals or copies of project materials and files. We have found from experience that this can be of benefit to the client two (2) ways:

- 1. it provides an additional backup in case the client loses track of the project materials and files, or if they are accidentally destroyed; and**
- 2. it allows TBG to quickly update projects if changes to the product are made by the client.**

Be assured that all materials are held in strictest confidence and protected either at TBG offices or in a guarded records storage facility (electronic files are kept in a climate controlled facility). In addition, any development materials that are superseded by newer material during the project are destroyed by industry standard methods (shredded, recycled, erased, etc.).

As a final benefit to our clients, TBG can suggest companies with which we have worked extensively in the past to produce the final form of the document (print house, CD production facilities, etc.). We can make the recommendation based on their past performance on projects with which we have been involved.

Newsletters

NOTARY NOTES

One-Step Apostille System

Effective October 15, 1981, the Hague Convention, of which the United States is a member, simplified the procedure for certifying foreign public documents. This revised process, which affixes the authentication of notariated documents, was the adoption of the apostille system. In the United States, apostille is pronounced "a paw steel", with the emphasis on the last syllable.

An apostille (a French word, meaning "an addition") is a guarantee that accompanies a document going out of the country, affirming a notary's authority. For countries that accept an apostille, a notariated document may be authenticated with only one paper from the Secretary of State (Secretary of the Commonwealth in Pennsylvania). Previously, a document destined for a foreign country could only be authenticated by a three-step process, called a "chain certification", involving certificates at the local, state, and national level.

Ms. Beth Baib, at the Secretary of State's Office in Harrisburg, notes the notary public's signature in Pennsylvania and attaches Baib completed 21,227 authentication requests (many using the 88 per day). She said the most frequent requests are for authentications to Russia and China to adopt children, to Vietnam to get married to Spain to enroll in college.

An apostille may be especially important to notaries working for litigation, for commercial firms involved in foreign contracting, for

Changes to the State Tax Reciprocity Chart

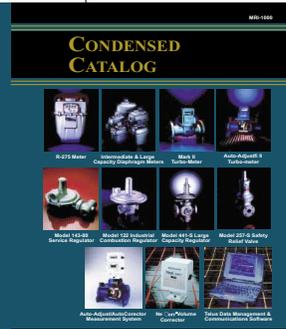
Three states have changed the percentage of motor vehicle sales tax reciprocity they have with Pennsylvania.

- Alabama has increased the amount of tax reciprocity with the Commonwealth from 3.75% to 5%;
- Georgia has decreased the amount from 6% to 4%; and
- Wisconsin has increased the amount by .1% — from 5.5% to 5.6%.

Please see the new chart for motor vehicle sales tax reciprocity on Page 16 of this issue of *Notary Notes*. Also, do not forget to make these changes to Chart 11-3 on Page 503 of *PAN'S Auto Manual: A Complete Guide to Driver Licensing and the Title & Registration of Vehicles*, 15th edition.

Pennsylvania Association of Notaries
Volume 44 Issue 285
December

Catalogs



CDs



3.1 BALANCE INQUIRIES (continued)

- Click **Inquire** located on the menu bar. A drop-down listing of options will be displayed.

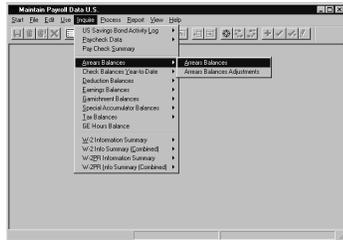


Figure 3-3
Maintain Payroll Data U.S.

- Drag the mouse down through the listing to highlight **Arrears Balances**. Click on the selection. A drop-down listing of options will be displayed to the right of your selection.
- Drag the mouse over to highlight **Arrears Balances**. Click on the selection.

Software Documentation

Service Manuals

Chapter 8: Repair & Replacement

Pressure Valve Assembly (PVA) Replacement (Continued)

- Remove the PVA / AFM coupling hose from the AFM inlet port.
- Remove the PVA bottom enclosure seal by starting at one corner and pulling the seal from the bottom enclosure. If any residue from the original seal remains on the bottom enclosure, remove it before installing the seal.

Step 5 Installing the PVA

NOTE: To ensure proper airflow, the outlet port / AFM adapter must be replaced. See Section 8.4.19, Steps 3-g and 4-b through d for more detailed instructions on replacing the outlet port / AFM adapter.

NOTE: Throughout this procedure, care should be taken not to damage any other internal components.

- Install the PVA / AFM coupling hose provided on the inlet port of the AFM assembly.

Align the PVA bottom enclosure seal with the PVA alignment pins, then press in place.

Slightly tilt the AFM assembly and position the PVA so that the PVA outlet port can be inserted into the PVA / AFM coupling hose.

- Using a slight rocking motion, insert the PVA outlet port far enough into the PVA / AFM coupling hose to allow the PVA to be properly seated in the bottom enclosure.
- Set the PVA in the bottom enclosure, making sure that the alignment pins are properly seated in their receptacles.

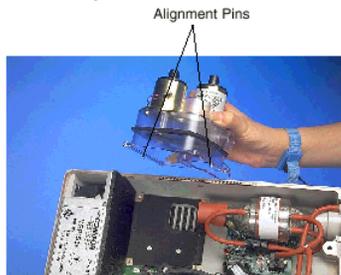
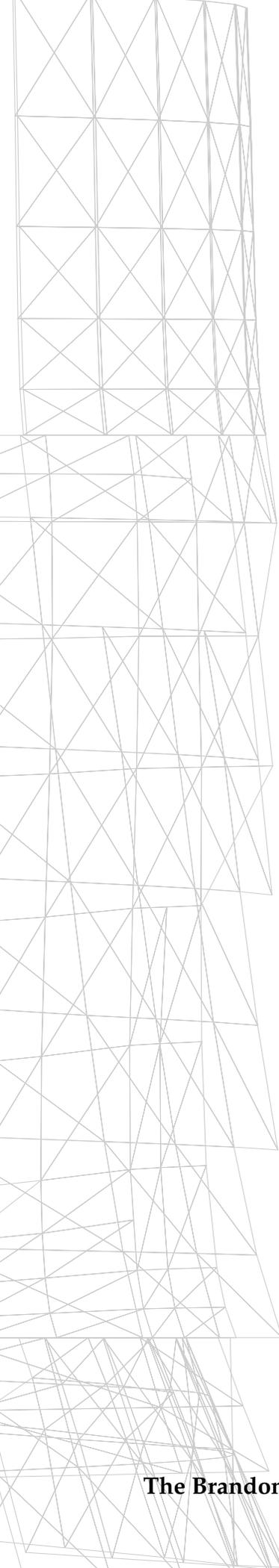


Figure 8-34
Location of the Alignment Pins

Notes



Appendices

Kickoff Meeting Check List

- state the project objective – what is the purpose / goal for the project;
- specify the exact target audience – who will be using the end product;
- supply the product to be documented and all support materials / hardware (i.e.: cables, connectors, accessories, sensors, existing documentation / marketing materials, etc.);
- supply any software applicable to the product;
- supply any background / internal materials / documentation containing information about the product (i.e.: development / engineering documentation, drawings, graphics, photos, flow diagrams, block diagrams, schematics, logic diagrams, etc.);
- supply the identity and contact information for each project team member (name, title, team function, phone, fax, e-mail address, etc.) who will be working on the project (i.e.: project engineers, technical service personnel, programmers, draftsmen, support personnel, etc.) and what role each will play in the project;
- identify the project team members who will be reviewing project materials and those who will issue final approval on materials submitted (i.e.: project managers, lead project engineers, team leaders, representatives from associated divisions - legal, quality control., etc.);
- review and approve the proposed project time line and deadlines for submission of materials for review and final approval; and
- decide on final product presentation (i.e.: printed manual, electronic distribution via CD, Internet, or Intranet, etc.)

Appendix B

Standard Proofreading / Copyediting Marks

MARGIN MARK MEANING AND TEXT MARKING

	Delete (take out)
	Close up;
	Delete and close up
stet	Leave as <u>printed</u> (when matter has been crossed out by mistake)
caps	Change to <u>capital</u> letters
sc	Change to <u>small</u> capitals
lc	Change capitals to L owercase
itals	Change to <u>italic</u> type
bf	Change to <u>bold</u> type
bf itals	Change to <u>bold italic</u> type
Rom	Change to <u>roman</u> type
wf	(Wrong font) Replace <u>with</u> type from correct font
↕	Invert <u>sup</u> type
=	Correct <u>align</u> ment: straighten
x	Replace by similar but unda <u>g</u> ed character or remove “dirt” or extraneous marks
∨	Insert (or substitute) superior figure or sign
∧	Insert (or substitute) inferior figure or sign
= or =	Insert (or substitute) hyphen
∕M	Insert (or substitute) em-dash
∕N	Insert (or substitute) en-dash
∧,	Insert (or substitute) comma
⊙	Insert (or substitute) period
⋯	Insert (or substitute) leader dots
#	Insert space

Standard Proofreading / Copyediting Marks (Continued)

⋈ ⋈	Insert parentheses
[]	Insert brackets
()	Reduce space between lines or paragraphs
TR	Transpose items these
] [Center
←[Move to the left
]→	Move to the right
□	Move up
□	Move down
¶	Begin new paragraph
^	(Caret mark) Insert matter indicated in margin
“ ”	Insert double quotes
’	Insert apostrophe or single quote

Appendix C



DRAFT / FINAL APPROVAL FORM

Client: _____ Date: _____

Project: _____ Material(s) Submitted: _____

The material(s) submitted is in the following form:

Draft Final Text Final Document Layout

The attached material(s) has been submitted for your review. As you review the material(s), please identify any changes / modifications that are to be made.

Upon completion of your review, please check the appropriate block and then sign below the checked block to verify that you have reviewed the materials(s). If you have any questions concerning the material(s), please contact the TBG representative identified on this form.

TBG cannot assume responsibility for any requested changes that are not indicated on the submitted materials(s) during your review.

Approved as Submitted

Signed:

1. _____ 2. _____

Changes / Modifications Requested Request Review After Changes

Signed:

1. _____ 2. _____

Date: _____

TBG Representative: _____

Appendix D

THE BRANDON GROUP INCORPORATED CONTACT INFORMATION SHEET

NAME	TITLE	PHONE 724-744-3579	E-MAIL ADDRESS
John P. Fullen	President Lead Project Manager Technical Writing	Extension 20	j.fullen@thebrandongroup.com t.writing@thebrandongroup.com tbgi@earthlink.net
Amy E. Kichko	Lead Project Manager Graphic Design Desktop Publishing	Extension 25	a.kichko@thebrandongroup.com g.design@thebrandongroup.com
Margaret M. Fullen	Business Manager Project Manager Graphic Designer Desktop Publishing	Extension 23	m.fullen@thebrandongroup.com g.business@thebrandongroup.com g.design@thebrandongroup.com
James H. Newmeyer	Project Manager Graphic Design Desktop Publishing	Extension 21	g.design@thebrandongroup.com
Todd M. Flowers	Project Manager Technical Writing	Extension 27	t.writing@thebrandongroup.com
Paul M. Yesko	Project Manager Technical Writing	Extension 26	t.writing@thebrandongroup.com
Karen E. Fetter	Project Manager Technical Writing	Extension 27	t.writing@thebrandongroup.com
Jeannine Shaffer	Project Manager Technical Writing	Extension 22	t.writing@thebrandongroup.com

Appendix E



Metric Conversion Factors

Supplied by The Brandon Group

Multiply	by	to obtain
British thermal unit (Btu)	1055.056	Joule (J)
British thermal unit (Btu)	0.2930711	Watt (W)
Celsius temperature (t_C)	$1.8t_C + 32 = t_F$	Fahrenheit temperature (t_F)
Celsius temperature (t_C)	$t_C + 273.15 = t_K$	Kelvin temperature (t_K)
Centimeter (cm)	0.03280840	Foot (ft)
Centimeter (cm)	0.3937	Inch (in.)
Centimeter (cm)	0.01	Meter (m)
Centimeter (cm)	10	Millimeter (mm)
Centimeter per minute (cm/min)	0.3937008	Inch per minute (ipm)
Centimeter per second (cm/s)	1.968504	Foot per minute (fpm)
Centimeter per second (cm/s)	0.03280840	Foot per second (fps)
Cubic centimeter (cm ³)	0.061023	Cubic inch (in. ³)
Cubic foot (ft ³)	0.02832	Cubic meter (m. ² ³)
Cubic foot (ft ³)	28.31685	Liter (l)
Cubic foot per minute (ft ³ /min)	0.004719474	Cubic meter per second (m ³ /s)
Cubic foot per minute (ft ³ /min)	28.31685	Liter per minute (l/min)
Cubic inch (in. ³)	16.38706	Cubic centimeter (cm ³)
Cubic inch (in. ³)	0.00001638706	Cubic meter (m ³)
Cubic inch (in. ³)	16,387.06	Cubic millimeter (mm ³)
Cubic meter (m ³)	61,023.76	Cubic inch (in. ³)
Cubic meter (m ³)	35.3147	Cubic foot (ft ³)
Cubic meter (m ³)	264.1720	Gallon, U.S. liquid (gal)
Cubic meter (m ³)	1000.0	Liter (l)
Cubic meter per minute (m ³ /min)	264.1720	Gallon per minute, U.S. liquid (gpm)
Cubic meter per second (m ³ /s)	2118.880	Cubic foot per minute (ft ³ /min)
Cubic meter per second (m ³ /s)	15,850.32	Gallon per minute , U.S. liquid (gpm)
Cubic millimeter (mm ³)	0.00006102376	Cubic inch (in. ³)
Dyne	0.00001	Newton (N)
Dyne-centimeter	0.0000001	Newton-meter (N-m)
Fahrenheit temperature (t_F)	$(t_F - 32) / 1.8$	Celsius temperature (t_C)
Fahrenheit temperature (t_F)	$(t_F + 459.67) / 1.8 = t_K$	Kelvin temperature (t_K)
Foot (ft)	30.48	Centimeter (cm)

Metric Conversion Factors (Continued)

Foot (ft)	0.3048	Meter (m)
Foot per hour (fph)	0.3048	Meter per hour (m/hr)
Foot per hour (fph)	0.00508	Meter per minute (m/min)
Foot per hour (fph)	0.00008466667	Meter per second (m/s)
Foot per minute (fpm)	0.508	Centimeter per second (cm/s)
Foot per minute (fpm)	18.288	Meter per hour (m/hr)
Foot per minute (fpm)	0.3048	Meter per minute (m/min)
Foot per minute (fpm)	0.00508	Meter per second (m/s)
Foot per second (fps)	30.48	Centimeter per second (cm/s)
Foot per second (fps)	18.288	Meter per minute (m/min)
Foot per second (fps)	0.3048	Meter per second (m/s)
Foot per second per second	0.3048	Meter per second per second (m/s ²)
Foot-pound-force (ft-lbf)	1.355818	Joule (J)
Foot-poundal	0.04214011	Joule (J)
Foot-pound per hour (ft-lb/hr)	0.0003766161	Watt (W)
Foot-pound per minute (ft-lb/min)	0.02259697	Watt (W)
Gallon, U.S. liquid (gal)	0.003785412	Cubic meter (m ³)
Gallon, U.S. liquid (gal)	3.785412	Liter (l)
Gallon per minute, U.S. liquid (gpm)	3.785412	Liter per minute (l/min)
Gallon per minute, U.S. liquid (gpm)	0.06309020	Liter per second (l/s)
Gallon per minute, U.S. liquid (gpm)	0.003785412	Cubic meter per minute (m ³ /s)
Gallon per minute, U.S. liquid (gpm)	0.00006309020	Cubic meter per second (m ³ /s)
Gram (g)	0.03527397	Ounce, (Av) (oz)
Gram (g)	0.03215074	Ounce, (troy) (oz)
Gram per cubic centimeter (g/cm ³)	0.3612730	Pound per cubic inch (lb./in. ³)
Horsepower (hp)	0.7456999	Kilowatt (kW)
Horsepower (hp)	745.6999	Watt (W)
Horsepower, Metric (hp)	735.499	Watt (W)
Inch (in.)	2.540	Centimeter (cm)
Inch (in.)	0.0254	Meter (m)
Inch (in.)	25.4	Millimeter (mm)
Inch of mercury, 32°F	3386.39	Newton per square meter (N/m ²)
Inch per minute (ipm)	2.54	Centimeter per minute (cm/min)
Inch per minute (ipm)	0.0254	Meter per minute (m/min)
Inch per minute (ipm)	25.4	Millimeter per minute (mm/min)
Joule (J)	0.0009478170	British thermal unit (Btu)
Joule (J)	0.7375621	Foot-pound-force (ft-lbf)
Joule (J)	23.73036	Foot-Poundal

Joule (J)	0.0002777778	Watt-hour (W-h)
Kelvin temperature(t_K)	$t_K - 273.15 = t_C$	Celsius temperature (t_C)
Kelvin temperature (t_K)	$1.8t_K - 459.67 = t_F$	Fahrenheit temperature (t_F)
Kilogram (kg)	0.0009842064	ton (long)
Kilogram (kg)	0.001	ton (metric)
Kilogram (kg)	0.001102311	Ton (short)
Kilogram (kg)	35.27397	Ounce, (Av) (oz)
Kilogram (kg)	32.15074	Ounce, (Troy) (oz)
Kilogram (kg)	2.20462	Pound, (Av) (lb)
Kilogram-force (kgf) or kilopound	9.80665	Newton (N)
Kilogram force per square millimeter (kgf/mm^2)	9.806650	Megapascal (MPa) or (MN/m^2)
Kilogram-force-meter (kgf-m)	9.806650	Newton-meter (N-m)
Kilogram-meter per second (kg-m/s)	7.233011	Pound-foot per second (lb-ft/s)
Kilogram-meter per second (kg-m/s)	86.79614	Pound-inch per second (lb-in./s)
Kilogram per cubic meter (kg/m^3)	0.06242797	Pound per cubic foot (lb/ft^3)
Kilometer (km)	0.6213712	Mile, (U.S. Statute)
Kilometer per hour (kph)	0.6213712	Mile per hour, (U.S. statute) (mph)
Kilogram-force per square centimeter (kgf/cm^2)	14.22334	Pound per square inch (psi)
Kilogram-force per square meter (Kgf/m^2)	9.806650	Newton per square meter (N/m^2)
Kilogram-force per square meter (kgf/m^2)	9.806650	Pascal (Pa)
Kilogram-force per square meter (kgf/m^2)	0.2048161	Pound per square foot (lb/ft^2)
Kilogram-force per square meter	0.001422	Pound per square inch (psi)
Kilowatt (kW)	1.341022	Horsepower (hp)
Kilowatt (kW)	3414.43	BTU
Kilowatt-hour (kwh)	3,600,000	Joule (J)
Kilonewton per square meter (kN/m^2)	0.1450377	Pound per square inch (psi)
Liter (l)	0.03531466	Cubic foot (ft^3)
Liter (l)	0.001	Cubic meter (m^3)
Liter (l)	0.2641720	Gallon, U.S. liquid (gal)
Liter per minute (lpm)	0.03531466	Cubic foot per minute (ft^3/min)
Liter per minute (lpm)	0.2641720	Gallon per minute, U.S. liquid (gpm)
Liter per second (lps)	15.85032	Gallon per minute, U.S. liquid (gpm)
Megapascal (MPa)	145.0377	Pound per square inch (psi)
Meter (m)	39.37008	Inch (in.)
Meter (m)	3.280840	Foot (ft)
Meter (m)	1.0936	Yard (yd)
Meter per hour (m/hr)	3.280840	Foot per hour (fph)

Metric Conversion Factors (Continued)

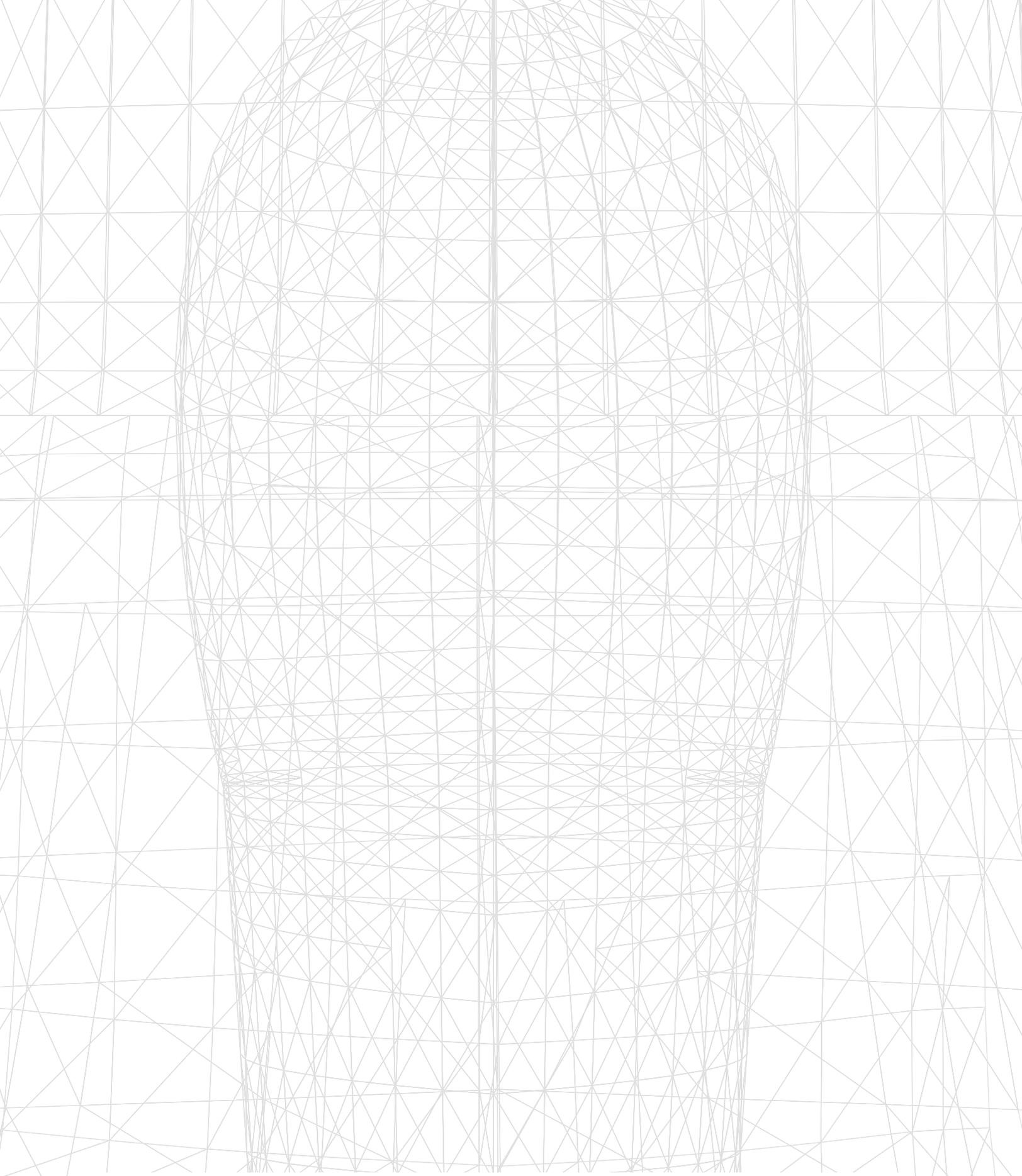
Meter per hour (m/hr)	0.05468	Foot per minute (fpm)
Meter per minute (m/min)	3.280840	Foot per minute (fpm)
Meter per minute (m/min)	0.05468067	Foot per second (fps)
Meter per minute (m/min)	39.37008	Inch per minute (ipm)
Meter per second (m/s)	11,811.02	Foot per hour (fph)
Meter per second (m/s)	196.8504	Foot per minute (fpm)
Meter per second (m/s)	3.280840	Foot per second (fps)
Microinch	0.0254	Micrometer or Micro
Micron	0.00000132	Atmosphere
Micron	0.0000394	Inch of mercury
Micron	0.001	Millimeter of mercury (Torr)
Micron	0.0000195	Pound per square inch (psi)
Micrometer or micron	39.37008	Microinch
Mile (U.S. Statute)	1.609344	Kilometer (km)
Mile per hour (mph)	1.609344	Kilometer per hour (kph)
Millimeter (mm)	0.03937008	Inch (in.)
Millimeter (mm)	0.003280840	Foot (ft)
Millimeter of Mercury (Torr)	0.00132	Atmosphere
Millimeter of Mercury (Torr)	0.0394	Inch of Mercury
Millimeter of Mercury (Torr)	1000	Micron
Millimeter of Mercury (Torr)	0.0195	Pound per square inch (psi)
Millimeter per minute (mm/min)	0.3937008	Inch per minute (ipm)
Newton (N)	100,000	Dyne
Newton (N)	0.1019716	Kilogram-force or kilopound (kgf)
Newton (N)	3.596942	Ounce-force (ozf)
Newton (N)	7.23301	Poundal
Newton (N)	0.2248089	Pound-force (lbf)
Newton-meter (N-m)	10,000,000	Dyne-centimeter
Newton-meter (N-m)	0.1019716	Kilogram-force-meter (kgf-m)
Newton-meter (N-m)	141,6119	Ounce-force-inch (ozf-in.)
Newton-meter (N-m)	0.73756	Pound-force-foot (lbf-ft)
Newton-millimeter (N-mm)	0.1416119	Ounce-force-inch (ozf-in.)
Newton per meter (N/m)	0.06852178	Pound-force per foot (lbf/ft)
Newton per meter (N/m)	0.005710148	Pound-force per inch (lbf/in.)
Newton per square centimeter (N/cm ²)	1.450377	Pound per square inch (psi)
Newton per square meter (N/m ²)	0.0002953	Inch of mercury
Newton per square meter (N/m ²)	0.1019716	Kilogram per square meter (kg/m ²)
Newton per square meter (N/m ²)	1.0	Pascal (Pa)

Newton per square meter (N/m ²)	0.0001450	Pound per square inch (psi)
Newton per square millimeter (N/mm ²)	145.0377	Pound per square inch (psi)
Ounce, (Av) (oz)	28.3495	Gram (g)
Ounce, (troy) (oz)	31.10348	Gram (g)
Ounce, (Av) (oz)	0.02834952	Kilogram (kg)
Ounce, (Troy) (oz)	0.03110348	Kilogram (kg)
Ounce-force (ozf)	0.2780139	Newton (N)
Ounce-force-inch (ozf-in.)	0.007061552	Newton-meter (N-m)
Ounce-force-inch (ozf-in.)	7.061552	Newton-millimeter (N-mm)
Pascal (Pa)	0.1019716	Kilogram per square meter (kg/m ²)
Pascal (Pa)	1.0	Newton per square meter (N/m ²)
Pascal (Pa)	0.02088543	Pound per square foot (lb/ft ²)
Pascal (Pa)	0.0001450377	Pound per square inch (psi)
Pound, (Av) (lb)	0.453592	Kilogram (kg)
Poundal	0.1382550	Newton (N)
Pound-foot (lb-ft)	1.355818	Newton-meter (N-m)
Pound-foot per second (lb-ft/s)	0.1382550	Kilogram-meter per second (kg-m/s)
Pound-force (lbf)	4.448222	Newton (N)
Pound-inch per second (lb-in/s)	0.01152125	Kilogram-meter per second (kg-m/s)
Pound per cubic inch (lb/in. ³)	27.67990	Gram per cubic centimeter (g/cm ³)
Pound per cubic foot (lb/ft ³)	16.01846	Kilogram per cubic meter (kg/m ³)
Pound per foot (lb/ft)	14.59390	Newton per meter (N/m)
Pound per inch (lb/in.)	175.1268	Newton per meter (N/m)
Pound per square foot (lb/ft ²)	4.882429	Kilogram per square meter (kg/m ²)
Pound per square foot (lb/ft ²)	47.88026	Newton per square meter (N/m ²)
Pound per square foot (lb/ft ²)	47.88026	Pascal (Pa)
Pound per square inch (psi)	0.063	Atmosphere
Pound per square inch (psi)	2.036	Inch of Mercury
Pound per square inch (psi)	0.70730697	Kilogram per square centimeter (kg/cm ²)
Pound per square inch (psi)	703.1	Kilogram per square meter (kg/m ²)
Pound per square inch (psi)	6.8948	Kilonewton per square meter (kN/m ²)
Pound per square inch (psi)	51,500	Micron
Pound per square inch (psi)	51.5	Millimeter of Mercury (Torr)
Pound per square inch (psi)	0.6894757	Newton per square centimeter (N/cm ²)
Pound per square inch (psi)	6894.76	Newton per square meter (N/m ²)
Pound per square inch (psi)	0.006895	Newton per square millimeter (N/mm ²)
Pound per square inch (psi)	6894.757	Pascal (Pa)
Square centimeter (cm ²)	0.001076391	Square foot (ft ²)

Metric Conversion Factors (Continued)

Square centimeter (cm ²)	0.1550003	Square inch (in. ²)
Square foot (ft ²)	929.0304	Square centimeter (cm ²)
Square foot (ft ²)	0.09290304	Square meter (m ²)
Square foot (ft ²)	92,903.04	Square millimeter (mm ²)
Square foot per second (ft ² /s)	0.092900304	Square meter per second (m ² /s)
Square inch (in. ²)	6.4516	Square centimeter (cm ²)
Square inch (in. ²)	0.00064516	Square meter (m ²)
Square inch (in. ²)	645.16	Square millimeter (mm ²)
Square meter (m ²)	10.763910	Square foot (ft ²)
Square meter (m ²)	1550.003	Square inch (in. ²)
Square millimeter (mm ²)	0.0001076387	Square foot (ft ²)
Square millimeter (mm ²)	0.001550003	Square inch (in. ²)
Ton (metric)	1000.	Kilogram (kg)
Ton (long)	1016.047	Kilogram (kg)
Ton (short)	907.1847	Kilogram (kg)
Ton / inch	.035716301	Tonne
Torr (mm Hg)	133.322	Pascal (Pa)
Watt (W)	3.412141	British thermal unit (Btu)
Watt (W)	2655.224	Foot-pound per hour (ft-lb/min)
Watt (W)	44.25372	Foot-pound per min. (ft-lb/min)
Watt (W)	0.001341022	Horsepower (hp)
Watt (W)	0.001359621	Horsepower (metric) (hp)
Watt-hour (W-h)	3600.	Joule (J)
Yard (yd)	0.9144	Meter (m)

Base Source: Iron Age Magazine Metric Conversion Kit



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