State of California

Board of Equalization
Property and Special Taxes Department

Memorandum

To: Mr. Ramon J. Hirsig
Executive Director

Date: October 8, 2004

From: David J. Gau, Deputy Director
Property and Special Taxes Department

Subject: ***Assessors' Handbook Section 581, Equipment Index and Percent Good Factors***
(November 4, 2004 Administrative Consent Agenda)

I am requesting that Assessors' Handbook Section 581, *Equipment Index and Percent Good Factors*, be approved for publication. Revenue and Taxation Code section 401.5 requires the Board to issue to county assessors information that will promote uniformity in assessed values throughout the state. Pursuant to that mandate, staff developed the January 2005 version of AH 581 that contains current tables of equipment index, percent good, and valuation factors that will aid in the mass appraisal of various types of personal property and fixtures.

Please place this item on the Board's November 4, 2004 Administrative Consent Calendar for approval.

DJG:lf
Attachment

cc: Ms. Deborah Pellegrini

Approved: _____
Ramon J. Hirsig, Executive Director

BOARD APPROVED
at the_____ Board Meeting

_____
Deborah Pellegrini, Chief
Board Proceedings

ASSESSORS' HANDBOOK
SECTION 581

EQUIPMENT INDEX AND PERCENT GOOD FACTORS

JANUARY 2005

(USE FOR LIEN DATE JANUARY 1, 2005)

CALIFORNIA STATE BOARD OF EQUALIZATION

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FOREWORD

This handbook section contains several tables of equipment index, percent good, and valuation factors that will aid in the mass appraisal of various types of personal property and fixtures. General instructions and pertinent information regarding the use of these tables are included in Chapters 1, 2, and 3. The tables are presented in Chapter 4.

Starting with the 2002 lien date, the commercial equipment index factors and the industrial equipment index factors in Tables 1 and 2 have been averaged into a single category of factors for each table. Use of a single category of factors for commercial equipment and a single category of factors for industrial equipment will provide value estimates within a reasonable band of value for the assessment of business property and promote statewide uniformity.

Prior to approval by the Board of this handbook section for 2002, staff researched the issue of whether the use of the index factors in Tables 1, 2, and 3 results in an estimate of replacement cost new or reproduction cost new. Board staff contacted representatives from the publications used to derive the index factors (Marshall and Swift Publication Company and the U. S. Bureau of Labor Statistics) while investigating this issue. From these responses, staff concluded that application of the index factors in this handbook section to a property's original cost typically results in reproduction cost new.

Index factors (Tables 1, 2, and 3) may be used to estimate current reproduction costs. Table 1, Commercial Equipment Index Factors, was compiled based on equipment price data published by the Marshall and Swift Publication Co., *Marshall Valuation Service*. Table 2, Industrial Machinery and Equipment Index Factors, and Table 3, Agricultural and Construction Equipment Index Factors, were derived using the Bureau of Labor Statistics' *Producer Price Indexes* as a basis. A discussion regarding the use of these factors can be found in Chapter 1.

Percent good factors (Tables 4 and 5) may be used in conjunction with the index factors to estimate reproduction cost new less normal depreciation. Table 4, Machinery and Equipment Percent Good Factors, was derived from a system developed by the Iowa State University Engineering Research Center. (See Chapter 2 for more information.) Table 5, Construction Mobile Equipment Percent Good Factors and Table 6, Agricultural Mobile Equipment Percent Good Factors, were derived from a detailed analysis of used equipment sales data.

For construction mobile equipment and agricultural mobile equipment, we suggest using the comparative sales approach if possible. Several valuation guides are available for this purpose (see Chapter 7). If the valuation guides are not used, the cost approach can be employed. The appropriate index factor from Table 3 should be applied to equipment cost along with a percent good factor from Table 5 for construction mobile equipment and the appropriate index factor from Table 3 should be applied to equipment cost along with a percent good factor from Table 6 for agricultural mobile equipment.

Valuation factors (Tables 7, 8, and 9) are intended to be applied directly to historical costs. The valuation factors in Table 7, Computer Valuation Factors, were developed by analyzing resale values of personal, mid-range, and mainframe computers as compared to original costs. The Board initially approved these factors in 1996. The valuation factors for semiconductor manufacturing equipment, Table 8, were approved by the Board in 1994 and continue to be recommended. The interim valuation factors for biopharmaceutical industry equipment and fixtures, Table 9, were adopted by the Board and effective as of the January 1, 1999 lien date.

All of the information presented in this section of the Assessors' Handbook is current for use as of the 2005 lien date, January 1, 2005. We hope the information presented proves useful to all concerned parties, and that it promotes uniformity of assessment. It is suggested that assessors utilize this data for mass appraisal purposes, but that does not preclude reliance on other documented evidence that results in a more accurate determination of assessed value.

David J. Gau, Deputy Director
Property and Special Taxes Department
California State Board of Equalization
January 2005

TABLE OF CONTENTS

CHAPTER 1: USE OF EQUIPMENT INDEX FACTORS 1
PRICE CHANGES 1
COMMERCIAL EQUIPMENT INDEX FACTORS 2
INDUSTRIAL EQUIPMENT INDEX FACTORS 3
MAXIMUM RECOMMENDED EQUIPMENT INDEX FACTOR 4
SUMMARY 5

CHAPTER 2: USE OF EQUIPMENT PERCENT GOOD FACTORS 6
MACHINERY AND EQUIPMENT PERCENT GOOD FACTORS 6
CONSTRUCTION AND AGRICULTURAL MOBILE EQUIPMENT PERCENT GOOD FACTORS 7

CHAPTER 3: USE OF VALUATION FACTORS 11
COMPUTER VALUATION FACTORS 11
SEMICONDUCTOR MANUFACTURING EQUIPMENT VALUATION FACTORS 12
INTERIM VALUATION FACTORS FOR BIOPHARMACEUTICAL INDUSTRY EQUIPMENT & FIXTURES .. 13

CHAPTER 4: EQUIPMENT INDEX FACTORS, PERCENT GOOD FACTORS, AND VALUATION FACTORS TABLES 14
TABLE 1: COMMERCIAL EQUIPMENT INDEX FACTORS 16
TABLE 2: INDUSTRIAL MACHINERY AND EQUIPMENT INDEX FACTORS 17
TABLE 3: AGRICULTURAL AND CONSTRUCTION EQUIPMENT INDEX FACTORS 18
TABLE 4: MACHINERY AND EQUIPMENT PERCENT GOOD FACTORS 19
TABLE 5: CONSTRUCTION MOBILE EQUIPMENT PERCENT GOOD FACTORS 20
TABLE 6: AGRICULTURAL MOBILE EQUIPMENT PERCENT GOOD FACTORS 21
TABLE 7: COMPUTER VALUATION FACTORS 22
TABLE 8: SEMICONDUCTOR MANUFACTURING EQUIPMENT VALUATION FACTORS 23
TABLE 9: INTERIM VALUATION FACTORS FOR BIOPHARMACEUTICAL INDUSTRY EQUIPMENT & FIXTURES 24

CHAPTER 5: CLASS INFORMATION 27
COMMERCIAL CLASSES CONTAINED IN AVERAGE INDEX (TABLE 1) 27
INDUSTRY CLASSES CONTAINED IN AVERAGE INDEX (TABLE 2) 28
DESCRIPTION OF INDUSTRY CLASSES 29

CHAPTER 6: CLASSIFICATION OF IMPROVEMENTS AS STRUCTURE ITEMS OR FIXTURES 32

CHAPTER 7: VALUATION GUIDES 37

CHAPTER 1: USE OF EQUIPMENT INDEX FACTORS

Equipment index factors are developed for use in mass appraisals and are generally reliable and practical for converting original cost to estimates of reproduction cost or replacement cost new. Index factors are used to adjust a property's original cost for price level changes since the property was acquired. The index factors recommended by the Board, updated and distributed annually, include three separate index factor tables: Table 1, Commercial Equipment; Table 2, Industrial Equipment; and Table 3, Agricultural and Construction Equipment. The tables rely on indexes published by the U.S. Government Bureau of Labor Statistics (BLS) and on information published by Marshall and Swift Publication Company (Marshall & Swift). The BLS and Marshall & Swift have indicated to Board staff that their indexes attempt to track price changes for an identical product sold under identical terms over time, such that the indexes approximate an estimate of reproduction cost new. Thus, when the original cost of property is multiplied by the Board's index factor for the year of acquisition, the product typically approximates current reproduction cost new.

In situations where equipment has undergone minimal changes in technology, reproduction cost and replacement cost are likely to be similar. In industries where the equipment used is undergoing rapid changes in technology, further adjustments are likely to be needed to arrive at replacement cost new. Thus, there may be situations where market evidence supports the need to make adjustments to reproduction cost to account for functional obsolescence before the percent good factors from Table 4 can be applied to arrive at market value. Any such adjustments should be based on reasonable evidence and appropriate adjustments should be made to arrive at replacement cost new. Assessors should consider such evidence provided by assessees when making these adjustments.

Please refer to Assessors' Handbook Section 504, *Assessment of Personal Property and Fixtures*, for guidelines on the use of reproduction and replacement costs in the appraisal process.

PRICE CHANGES

Price changes are usually an increasing factor (inflation). During those periods of time when the cost of raw material and/or labor actually declines, price changes may be a decreasing factor (deflation).

Effects of Technological Progress

If technological progress has occurred since the acquisition date of an asset, the cost of producing a functionally superior but physically similar asset may now be lower. Consequently, the current replacement cost new of previously existing assets will probably decline. High technology equipment, for example, typically suffers greater than normal functional obsolescence due to technological progress.

COMMERCIAL EQUIPMENT INDEX FACTORS

Indexes for commercial equipment are supplied in Chapter 4, Table 1, Commercial Equipment Index Factors. If the index factors do not reasonably represent changes in equipment costs for a particular industry, additional research should be done to find a more appropriate method of estimating replacement cost new.

The following example demonstrates how to use the index factors to estimate reproduction cost new.

Example 1.1: Estimating Reproduction Cost New Using Commercial Equipment Index Factors

A taxpayer acquired office equipment for $1,000 in 2001. What is the estimated reproduction cost new of this office equipment as of the January 1, 2005 lien date?

The appropriate factor is found in Table 1 under the Average column for 2001.

TABLE 1: COMMERCIAL EQUIPMENT INDEX FACTORS

Year	Average
2004	100
2003	104
2002	105
2001	**106**

The factor is shown in the table as a percentage and must be converted to a decimal. The factor in decimal format is applied to the acquisition cost to compute the reproduction cost new.

Year of Acquisition	Cost	Index Factor	Reproduction Cost New
2001	$1,000	**1.06**	$1,060

In other words, it would require an expenditure of approximately $1,060 on the 2005 lien date to reproduce the office equipment purchased in 2001 for $1,000.

INDUSTRIAL EQUIPMENT INDEX FACTORS

The indexes for industrial equipment are supplied in Chapter 4, Table 2, Industrial Machinery and Equipment Index Factors. Chapter 5 of this handbook contains a listing of industry classes that are represented by these indexes. A detailed description of each industry class follows in Chapter 5.

The following example demonstrates the use of the index factors to compute reproduction cost new.

Example 1.2: Estimating Reproduction Cost New Using Industrial Machinery and Equipment Index Factors

On the 2005 lien date, what is the reproduction cost new for rubber tire manufacturing equipment acquired for $100,000 in 2001?

The appropriate index factor is found in Table 2 under the column across from the year of acquisition, 2001.

TABLE 2: INDUSTRIAL MACHINERY AND EQUIPMENT INDEX FACTORS

Year	Average
2004	100
2003	104
2002	104
2001	**104**

The appropriate index factor of 104 percent is converted to a decimal (1.04) and multiplied by the acquisition cost as follows:

Year of Acquisition	Cost	Index Factor	Reproduction Cost New
2001	$100,000	**1.04**	$ 104,000

In other words, it would require an expenditure of approximately $104,000 on the 2005 lien date to reproduce the rubber tire manufacturing equipment acquired in 2001 for $100,000.

MAXIMUM RECOMMENDED EQUIPMENT INDEX FACTOR

Because rapid technological changes have taken place in recent years, Board staff recommends that appraisers use a maximum equipment index factor when valuing equipment. The recommended maximum factor is the factor for an age equal to 125 percent of the estimated average service life. The following example demonstrates the use of the 125 percent maximum.

Example 1.3: Estimating the Maximum Recommended Equipment Index Factor

- A taxpayer acquired warehouse equipment for $15,000 in 1987. What is the maximum recommended equipment index factor if this equipment has a 12 year average service life?
- Average service life of 12 years multiplied by the recommended 125 percent maximum equals 15 years (12 x 1.25 = 15), recommended maximum.
- Since the recommended maximum is 15 years, the appropriate index factor is the index factor corresponding to an item acquired in 1990 (2005 - 15). The index factor is 127 percent.
- Actual age of equipment on 2005 lien date is 18 years (2005 - 1987 = 18). Without using the recommended maximum, the index factor is 143 percent.

TABLE 1: COMMERCIAL EQUIPMENT INDEX FACTORS

Year	Average
2004	100
2003	104
2002	105
1990	**127**
1989	131
1988	137
1987	**143**

The following table indicates the estimated reproduction cost new of the property using the maximum recommended index factor (1.27) and the index factor using the actual age (1.43). Application of the maximum recommended index factor results with an estimated reproduction cost new of $19,050 to reproduce the warehouse equipment purchased in 1987 for $15,000. Application of the index factor associated with the actual age of the property results with an estimated reproduction cost new of $21,450 to replace the warehouse equipment purchased in 1987 for $15,000. The example illustrates the difference in the estimate of reproduction cost new when the recommended maximum is not used.

Example 1.3 -- continued

	Year of Acquisition	Cost	Index Factor	Reproduction Cost New
Maximum	1990[1]	$15,000	1.27	$19,050
Actual	1987	$15,000	1.43	$21,450

Use of the 125 percent limit is a recommendation. It is not intended to replace appraiser judgment. If the appraiser believes that using the 125 percent limit is inappropriate, the appraiser should provide a well-supported explanation of the reason for deviating from the recommendation.

SUMMARY

Examples 1.1, 1.2, and 1.3 illustrate the use of Tables 1 and 2. Table 3, Agricultural and Construction Equipment Index Factors, is used in the same manner. (See Chapter 2, Examples 2.2 and 2.3, for complete examples related to agricultural and construction equipment.)

Although this handbook section contains appropriate index factors for many types of taxable equipment found in California, better information is available from other sources in many cases. In situations where equipment has undergone minimal changes in technology, reproduction cost and replacement cost are likely to be similar. In industries where the equipment used is undergoing rapid changes in technology, it may be more appropriate to use actual, current, replacement prices for some types of equipment. Actual current replacement prices are nearly always better indicators of replacement value than indexed acquisition costs. Where actual current replacement prices are not available, the assessor should make adjustments to account for functional obsolescence based on reasonable evidence available.

As discussed in this chapter, the index factor is used to convert acquisition cost to an estimate of reproduction cost new. The next chapter discusses the use of percent good factors and tables. The percent good factor converts the reproduction cost new to reproduction cost new less normal depreciation.

[1] Actual year of acquisition is 1987. The year 1990 represents the recommended maximum.

CHAPTER 2: USE OF EQUIPMENT PERCENT GOOD FACTORS

MACHINERY AND EQUIPMENT PERCENT GOOD FACTORS

Table 4, Machinery and Equipment Percent Good Factors, presented in Chapter 4, is designed to assist the appraiser in estimating reproduction cost new less normal depreciation of commercial and industrial equipment in conjunction with index factors as discussed in Chapter 1.[2] This table was derived using the "individual method" of computation. The rationale and the mathematics of the methods of computation are explained in Assessors' Handbook Section 582 (AH 582), *Explanation of the Derivation of Equipment Percent Good Factors.*

The rate of return used to compute the factors shown in Table 4 is calculated annually and is shown at the top of the table. The column headings represent the average service life expectancy of the equipment under consideration. Each column contains the percent good factor for the corresponding age.[3] No minimum percent good factor is intended in this table. If the assessor utilizes a minimum percent good factor, it must be determined in a supportable manner.[4]

Example 2.1 carries forward the calculation shown in Chapter 1, Example 1.1, to illustrate use of the percent good factors found in Table 4.

Example 2.1: Estimating Reproduction Cost New Less Normal Depreciation

Continuing with the facts from Example 1.1, what is the reproduction cost new less normal depreciation on the 2005 lien date for office equipment purchased in 2001 at an acquisition cost of $1,000?

- Facts derived in Example 1.1: Index factor 1.06, reproduction cost new $1,060.
- Appraiser estimates average service life of 12 years.
- The appropriate percent good factor (72%) can be found in the 12 year life column at year 2001, in Table 4.

TABLE 4: MACHINERY AND EQUIPMENT PERCENT GOOD FACTORS

INDIVIDUAL PROPERTIES—AVERAGE SERVICE LIFE

6.75% Rate of return

Year Acquired	AGE	5 Years	10 Years	**12 Years**	15 Years	AGE	Year Acquired
2004	1	81	92	94	95	1	2004
2003	2	62	83	87	90	2	2003
2002	3	45	75	80	85	3	2002
2001	4	29	66	**73**	80	4	2001

[2] Separate percent good tables are provided for construction mobile equipment (Table 5) and agricultural mobile equipment (Table 6).

[3] Life expectancies are derived from the R-3 survivor curve.

[4] Revenue and Taxation Code section 401.16. (All section references in this section of the handbook refer to Revenue and Taxation Code sections unless otherwise noted.)

Example 2.1 -- continued

The percent good factor is applied to the reproduction cost new to compute the reproduction cost new less normal depreciation. (The factor, in Table 4, is shown as a percentage and must be converted to a decimal in order to do the computation.)

Year of Acquisition	Cost	Index Factor	Reproduction Cost New	Percent Good	Reproduction Cost Less Normal Depreciation
2001	$1,000	1.06	$1,060	.73	$ 774

To reiterate, applying the index factor and the percent good factor to office equipment purchased in 2001 for $1,000 results in an estimated value of $774 on lien date January 1, 2005. It is important to note that the percent good factor reflects only normal depreciation. Additional value adjustments may be necessary if the property has experienced above- or below-normal loss in value.

CONSTRUCTION AND AGRICULTURAL MOBILE EQUIPMENT PERCENT GOOD FACTORS

The percent good factors provided in Table 5 and Table 6, Chapter 4, are to be used when determining the loss of value for construction mobile equipment and agricultural mobile equipment, respectively. The factors presented were derived from used equipment sales data. Table 5 identifies a pattern of depreciation for construction mobile equipment and Table 6 identifies a pattern of deprecation for two groups of equipment (1) agricultural mobile equipment - *except* harvesters, and (2) agricultural mobile equipment - harvesters.

Within each group, three columns of percent good figures ("new", "used", and "average") are listed. The column labeled "new" should be used to measure depreciation if the subject property was acquired new; conversely, the column labeled "used" should be applied when the equipment was purchased used. In cases where the taxpayer does not indicate if the property was first acquired new or first acquired used, tables 5 and 6 provide an average of the new and used factors. The assessor may not average the "new" and "used" factors unless the taxpayer does not indicate if the property was first acquired new or first acquired used.[5]

The following examples demonstrate the use of the construction index and percent good factors found in Table 3 and Table 5 respectively.

[5] Section 401.16.

Example 2.2: Estimating Reproduction Cost New Less Normal Depreciation for Construction Mobile Equipment Acquired New

On the 2005 lien date, what is the assessable value of a construction motor grader acquired **new** in 2001 for $100,000?

The first step is determining the appropriate index factor. As indicated below the index factor is 107. The factor is shown in the table as a percentage and must be converted to a decimal.

TABLE 3: AGRICULTURAL AND CONSTRUCTION EQUIPMENT INDEX FACTORS

YEAR	Agricultural	**Construction**
2004	100	100
2003	103	104
2002	105	105
2001	106	**107**

The second step is determining the appropriate percent good factor. The percent good factor indicated below for construction mobile equipment purchased **new** in 2001 is 55 percent.

TABLE 5: CONSTRUCTION MOBILE EQUIPMENT PERCENT GOOD FACTORS

CONSTRUCTION MOBILE EQUIPMENT

Year Acquired	Age	**New**	Used	Average
2004	1	74	91	83
2003	2	66	81	74
2002	3	60	74	67
2001	4	**55**	68	62

The third step is to apply the factors to the acquisition cost of the construction mobile equipment to determine the reproduction cost new less normal depreciation, or estimated value.

Equipment Group	Year of Acquisition	Cost	Index Factor	Reproduction Cost New	Percent Good	Reproduction Cost Less Normal Depreciation
Construction	2001	$100,000	**1.07**	$107,000	**.55**	$58,850

In other words, the estimated value of construction equipment acquired **new** in 2001 at an acquisition cost of $100,000 is $58,850.

Example 2.3: Estimating Reproduction Cost New Less Normal Depreciation for Construction Mobile Equipment Acquired Used

What is the estimated value of a construction motor grader acquired **used** in 2001 for $100,000?

As in Example 2.2, the first step is determining the appropriate index factor. As indicated below, the index factor is 107.

TABLE 3: AGRICULTURAL AND CONSTRUCTION EQUIPMENT INDEX FACTORS

YEAR	Agricultural	Construction
2004	100	100
2003	103	104
2002	105	105
2001	106	**107**

The second step is determining the appropriate percent good factor. The percent good factor indicated below for construction mobile equipment purchased used in 2001 is 68%.

TABLE 5: CONSTRUCTION MOBILE EQUIPMENT PERCENT GOOD FACTORS

CONSTRUCTION MOBILE EQUIPMENT

Year Acquired	Age	New	Used	Average
2004	1	74	91	83
2003	2	66	81	74
2002	3	60	74	67
2001	4	55	**68**	62

The third step is to apply the factors to the acquisition cost of the **used** construction equipment, to determine the reproduction cost new less normal depreciation, or estimated value.

Equipment Group	Year of Acquisition	Cost	Index Factor	Reproduction Cost New	Percent Good	Reproduction Cost Less Normal Depreciation
Construction	2001	$100,000	**1.07**	$107,000	**.68**	$72,760

In other words, the estimated value of construction equipment acquired **used** in 2001 at an acquisition cost of $100,000 is $72,760.

For construction mobile equipment and agricultural mobile equipment, where "new" or "used" status cannot be determined from appraisal data at hand, Tables 5 and 6 provide an average of the new and used factors.[6]

[6] The "average" factors may not be used by the assessor unless the taxpayer does not indicate if the property was first acquired new or first acquired used, as specified in section 401.16.

CHAPTER 3: USE OF VALUATION FACTORS

COMPUTER VALUATION FACTORS

Computer valuation tables were originally developed by the Board in 1995, and amended in 1997. The factors were developed by analyzing resale values of personal, mid-range, and mainframe computers as compared to original costs. These factors, provided in Table 7, Chapter 4, are intended to be applied directly to historical costs. As such, the tables include the effects of price changes (index or trend) and depreciation. Before using these tables, it is critically important to understand what types of equipment are intended to be valued using the tables.

First, the tables are intended to apply to non-production computers. Non-production computers are computers, including related equipment, designed for general business purposes. Non-production computers can be mainframe, mid-range, or personal computers (including networked personal computers). Related equipment includes monitors, printers, scanners, disk drives, cables, and other electronic peripherals commonly used as part of a non-production computer system.

The definition of non-production computers does not include computers embedded in machinery nor does it include equipment or computers specifically designed for use in any other application directly related to manufacturing. For example, equipment used for the manufacture of computers, semiconductors, or other computer components are production computers; therefore, the computer valuation factors are not appropriate for the valuation of such equipment. The following example demonstrates the use of the computer valuation factors.

Example 3.1: Estimating Replacement Cost New Less Normal Depreciation Using Valuation Factors

On the 2005 lien date, what is the estimated value of a mainframe computer acquired in 2002 for $525,000?

The first step is determining the valuation factor. As shown on the table below, the valuation factor is 35 %.

TABLE 7: COMPUTER VALUATION FACTORS

Year Acquired	Age	PERSONAL COMPUTERS ($25,000 or less)	MID-RANGE COMPUTERS ($25,000.01 to $500,000)	MAINFRAME COMPUTERS ($500,000.01 or more)
2004	1	66	73	79
2003	2	39	47	54
2002	3	24	30	**35**

Example 3.1 -- continued

Since the valuation factor includes the effect of price changes (index or trend) and depreciation, the second step is to apply the valuation factor to the acquisition cost of the mainframe computer equipment.

Equipment Group	Year of Acquisition	Cost	Valuation Factor	Replacement Cost Less Normal Depreciation
Mainframe Computers	2002	$525,000	.35	$183,750

The replacement cost new less normal depreciation of mainframe computer equipment purchased in 2002 for $525,000 is $183,750.

SEMICONDUCTOR MANUFACTURING EQUIPMENT VALUATION FACTORS

The semiconductor manufacturing equipment valuation table (Chapter 4, Table 8) presents factors initially approved by the Board in 1994.[7] The table is based on a 6.5 year economic life. Similar to the computer valuation factors, the semiconductor manufacturing equipment valuation factors are intended to be applied directly to historical costs. The tables include the effects of price changes (index or trend) and depreciation. As shown in the example demonstrating the use of computer valuation factors (Example 3.1), only one factor is applied to the acquisition cost to determine the replacement cost new less normal depreciation.

[7] For more information regarding the original study and development of these factors, please refer to Letter To Assessors 90/36 and 94/24.

INTERIM VALUATION FACTORS FOR BIOPHARMACEUTICAL INDUSTRY EQUIPMENT & FIXTURES

In 1999 the Board adopted interim guidelines pertaining to the assessment of specific property owned and/or used by the biopharmaceutical industry.[8] These guidelines, which were effective as of the January 1, 1999 lien date, included a definition of reporting categories for these types of firms, and a valuation table for use in valuing these types of properties for assessment purposes.[9]

On standard annual property statements, pursuant to these guidelines, biopharmaceutical firms should report specific types of equipment and fixtures as described below:

Form 571-L Category	Description
SCHEDULE A	
Machinery and Equipment	General Laboratory Equipment and High Technology Analytical Instruments
Other Equipment	Commercial Manufacturing Equipment
Tools, Molds, Dies, Jigs	Pilot Scales Manufacturing Equipment
SCHEDULE B	
Fixtures	Fixtures and Process Piping

A sample listing of the equipment and fixtures covered by these descriptions is included in Chapter 4, following Table 9.

Table 9, Interim Valuation Factors for Biopharmaceutical Industry Equipment & Fixtures, presents the Board adopted valuation table for the biopharmaceutical industry. The factors are intended to be applied directly to historical costs for mass appraisal purposes, as are the computer valuation factors and the semiconductor manufacturing equipment valuation factors. (See Example 3.1 for a demonstration of application.) As illustrated in Table 9, a minimum factor of ten percent is to be applied.

[8] Firms engaged in research and/or manufacturing activities that use organisms, or materials derived from organisms, and their cellular subcellular and molecular components to discover and/or provide products for human or animal therapeutics and diagnostics. Biopharmaceutical activities make use of living organisms to develop and/or produce commercial products, as opposed to conventional pharmaceutical activities, that make use of chemical compounds to develop and/or produce commercial products. Firms engaging in agriculture, animal husbandry, and pharmaceutical delivery in the area of research and/or manufacturing are specifically excluded.

[9] See also Letter to Assessors 99/54.

CHAPTER 4: EQUIPMENT INDEX FACTORS, PERCENT GOOD FACTORS, AND VALUATION FACTORS TABLES

(Use for Lien Date January 1, 2005)

INDEX FACTOR TABLES

Table 1: Commercial Equipment Index Factors

These factors are derived using data published by the Marshall and Swift Publication Co., *Marshall Valuation Service*. The indexes contained in Table 1 are an average of several classes of commercial equipment. See Chapter 5 for each class of equipment included in the average index.

Table 2: Industrial Machinery and Equipment Index Factors

These indexes are derived from data in the Bureau of Labor Statistics' *Producer Price Indexes*. The indexes contained in Table 2 are an average of several classes of industrial equipment. See Chapters 6 and 7 for detailed descriptions of each industry group in average index.

Table 3: Agricultural and Construction Equipment Index Factors

These indexes are derived from data in the Bureau of Labor Statistics' *Producer Price Indexes*.

PERCENT GOOD FACTOR TABLES

Table 4: Machinery and Equipment Percent Good Factors

These factors are derived from a system developed by the Iowa State University Engineering Research Center (see AH 582). The rate of return used to compute these factors is calculated annually and is shown on the table.

Table 5: Construction Mobile Equipment Percent Good Factors

These factors were derived from a detailed analysis of used equipment sales data.

Table 6: Agricultural Mobile Equipment Percent Good Factors

These factors were derived from a detailed analysis of used equipment sales data.

VALUATION FACTORS TABLES

Table 7: Computer Valuation Factors

These factors are intended to be applied directly to historical costs of non-production computers, computers, including related equipment, designed for general business purposes.

Table 8: Semiconductor Manufacturing Equipment Valuation Factors

These factors are intended to be applied directly to historical costs of semiconductor manufacturing equipment.

Table 9: Interim Valuation Factors for Biopharmaceutical Industry Equipment and Fixtures

These factors are intended to be applied directly to historical costs of specific property owned and/or used by the biopharmaceutical industry.

TABLE 1: COMMERCIAL EQUIPMENT INDEX FACTORS

2004 COST = 100

Year	Average
2004	100
2003	104
2002	105
2001	106
2000	107
1999	109
1998	109
1997	110
1996	111
1995	113
1994	117
1993	120
1992	123
1991	125
1990	127
1989	131
1988	137
1987	143
1986	146
1985	147
1984	149
1983	154
1982	157
1981	164
1980	180
1979	196
1978	215
1977	231
1976	242
1975	257
1974	284
1973	326
1972	338
1971	348
1970	367
1969	390
1968	406
1967	423
1966	440
1965	451

TABLE 2: INDUSTRIAL MACHINERY AND EQUIPMENT INDEX FACTORS

2004 COST = 100

Year	Average
2004	100
2003	104
2002	104
2001	104
2000	105
1999	106
1998	107
1997	108
1996	109
1995	111
1994	115
1993	117
1992	120
1991	121
1990	125
1989	128
1988	134
1987	140
1986	142
1985	145
1984	148
1983	152
1982	155
1981	163
1980	180
1979	201
1978	221
1977	240
1976	257
1975	272
1974	318
1973	374
1972	390
1971	399
1970	416
1969	439
1968	455
1967	472
1966	489
1965	507

TABLE 3: AGRICULTURAL AND CONSTRUCTION EQUIPMENT INDEX FACTORS

2004 COST = 100

Year	Agricultural	Construction
2004	100	100
2003	103	104
2002	105	105
2001	106	107
2000	108	107
1999	109	108
1998	111	109
1997	112	112
1996	113	114
1995	116	116
1994	121	119
1993	124	120
1992	128	123
1991	132	127
1990	137	131
1989	141	135
1988	147	142
1987	152	146
1986	152	149
1985	153	151
1984	154	153
1983	158	155
1982	166	159
1981	179	170
1980	200	189
1979	223	213
1978	243	235
1977	261	256
1976	283	275
1975	307	295
1974	360	358
1973	410	418
1972	423	434
1971	440	449
1970	457	471
1969	476	495
1968	498	517
1967	518	546
1966	534	565
1965	550	584

TABLE 4: MACHINERY AND EQUIPMENT PERCENT GOOD FACTORS

INDIVIDUAL PROPERTIES--AVERAGE SERVICE LIFE

6.75% Rate of Return

Year Acq'd	AGE	3	4	**5**	6	7	8	9	**10**	11	12	13	14	**15**	17	18	**20**	22	**25**	**30**	**35**	**40**	AGE	Year Acq'd
2004	1	67	76	**81**	85	87	89	91	**92**	93	94	94	95	**95**	96	96	**97**	97	**98**	**99**	**99**	**99**	1	2004
2003	2	38	52	**62**	69	74	78	81	**83**	85	87	88	89	**90**	92	93	**94**	95	**96**	**97**	**98**	**98**	2	2003
2002	3	17	32	**45**	54	61	67	71	**75**	78	80	82	84	**85**	88	89	**91**	92	**94**	**95**	**97**	**98**	3	2002
2001	4	6	17	**29**	40	49	56	61	**66**	70	73	76	78	**80**	83	85	**87**	89	**91**	**94**	**96**	**97**	4	2001
2000	5		8	**18**	28	37	45	52	**57**	62	66	69	72	**75**	79	81	**84**	86	**89**	**92**	**94**	**96**	5	2000
1999	6		3	**10**	18	27	35	42	**49**	54	59	63	66	**69**	74	76	**80**	83	**86**	**90**	**93**	**95**	6	1999
1998	7			**5**	11	19	26	34	**41**	46	52	56	60	**64**	70	72	**76**	80	**84**	**89**	**92**	**94**	7	1998
1997	8			**1**	7	13	19	26	**33**	39	45	50	54	**58**	65	68	**72**	76	**81**	**87**	**90**	**93**	8	1997
1996	9				3	8	14	20	**26**	32	38	44	48	**53**	60	63	**69**	73	**78**	**85**	**89**	**92**	9	1996
1995	10					4	10	15	**20**	26	32	37	43	**47**	55	59	**65**	70	**75**	**83**	**87**	**91**	10	1995
1994	11					1	6	11	**16**	21	26	32	37	**42**	50	54	**61**	66	**73**	**80**	**86**	**89**	11	1994
1993	12						3	8	**12**	16	22	27	32	**37**	45	49	**57**	62	**70**	**78**	**84**	**88**	12	1993
1992	13							5	**9**	13	17	22	27	**32**	41	45	**52**	59	**66**	**76**	**82**	**87**	13	1992
1991	14							2	**6**	10	14	18	23	**27**	36	40	**48**	55	**63**	**74**	**81**	**86**	14	1991
1990	15								**4**	7	11	15	19	**23**	32	36	**44**	51	**60**	**71**	**79**	**84**	15	1990
1989	16								**1**	5	9	12	16	**19**	28	32	**40**	48	**57**	**69**	**77**	**83**	16	1989
1988	17									2	6	9	13	**16**	24	28	**37**	44	**54**	**66**	**75**	**81**	17	1988
1987	18										4	7	10	**14**	21	25	**33**	40	**51**	**64**	**73**	**80**	18	1987
1986	19										1	5	8	**11**	18	22	**29**	37	**47**	**61**	**71**	**78**	19	1986
1985	20											2	6	**10**	15	19	**26**	33	**44**	**58**	**69**	**77**	20	1985
1984	21												4	**8**	13	16	**23**	30	**41**	**56**	**67**	**75**	21	1984
1983	22												2	**5**	11	14	**21**	28	**38**	**53**	**65**	**73**	22	1983
1982	23													**3**	10	12	**18**	24	**35**	**50**	**62**	**72**	23	1982
1981	24													**1**	8	10	**16**	22	**32**	**48**	**60**	**70**	24	1981
1980	25														6	8	**14**	19	**29**	**45**	**58**	**68**	25	1980
1979	26														3	6	**13**	18	**27**	**42**	**56**	**66**	26	1979
1978	27														1	5	**11**	15	**24**	**40**	**53**	**64**	27	1978
1977	28															2	**9**	14	**22**	**37**	**51**	**63**	28	1977
1976	29															1	**7**	12	**20**	**34**	**49**	**60**	29	1976
1975	30																**5**	11	**18**	**32**	**46**	**59**	30	1975
1974	31																**3**	8	**17**	**30**	**44**	**56**	31	1974
1973	32																**2**	7	**15**	**28**	**42**	**54**	32	1973
1972	33																	5	**14**	**26**	**40**	**52**	33	1972
1971	34																	3	**12**	**24**	**38**	**50**	34	1971
1970	35																	2	**10**	**22**	**35**	**48**	35	1970
1969	36																		**9**	**21**	**33**	**46**	36	1969
1968	37																		**7**	**19**	**31**	**44**	37	1968
1967	38																		**5**	**17**	**29**	**42**	38	1967
1966	39																		**3**	**16**	**27**	**40**	39	1966
1965	40																		**2**	**15**	**26**	**38**	40	1965

NO MINIMUM PERCENT GOOD INTENDED

TABLE 5: CONSTRUCTION MOBILE EQUIPMENT PERCENT GOOD FACTORS

Year Acquired	Age	CONSTRUCTION MOBILE EQUIPMENT		
		New	Used	Average*
2004	1	74	91	83
2003	2	66	81	74
2002	3	60	74	67
2001	4	55	68	62
2000	5	51	62	57
1999	6	47	58	53
1998	7	42	52	47
1997	8	38	47	43
1996	9	35	43	39
1995	10	31	38	35
1994	11	28	34	31
1993	12	26	32	29
1992	13	24	29	27
1991	14	22	27	25
1990	15	20	25	23
1989	16	19	23	21
1988	17	16	20	18
1987	18	13	17	15
1986	19	12	13	13
1985	20	11	11	11
1984	21		9	5

NO MINIMUM PERCENT GOOD INTENDED

USE OF TABLE 5

The percent good table is designed to assist the appraiser in determining total loss of value once reproduction cost new (RCN) has been determined for the captioned equipment.

The table, derived from used equipment sales data, identifies a pattern of depreciation for construction mobile equipment. The column labeled "new" should be used to measure depreciation if the subject property was acquired new; conversely, the column labeled "used" should be applied when the equipment was purchased used. In cases where the taxpayer does not indicate if the property was first acquired new or first acquired used, table 5 provides an average of the new and used factors. The "new" and "used" factors may not be averaged unless the taxpayer does not indicate if the property was first acquired new or first acquired used.[10]

*Starting with the 2005 lien date, average factors were provided to reflect the provisions of section 401.16 as to use of average percent good factors.

[10] Section 401.16.

TABLE 6: AGRICULTURAL MOBILE EQUIPMENT PERCENT GOOD FACTORS

Year Acquired	Age	AGRICULTURAL MOBILE EQUIPMENT						Age
		EXCEPT HARVESTERS			HARVESTERS			
		New	Used	Average	New	Used	Average*	
2004	1	78	92	85	74	90	82	1
2003	2	70	82	76	64	78	71	2
2002	3	64	75	70	57	69	63	3
2001	4	58	68	63	50	60	55	4
2000	5	52	62	57	43	53	48	5
1999	6	47	56	52	38	46	42	6
1998	7	42	50	46	33	40	37	7
1997	8	38	45	42	29	35	32	8
1996	9	34	40	37	25	30	28	9
1995	10	30	36	33	21	26	24	10
1994	11	27	32	30	19	23	21	11
1993	12	25	30	28	17	21	19	12
1992	13	23	28	26	15	18	17	13
1991	14	22	26	24		16	8	14
1990	15	20	23	22		14	7	15
1989	16	18	21	20		14	7	16
1988	17		19	10				17
1987	18		17	9				18
1986	19							19
1985	20							20
1984	21							21

NO MINIMUM PERCENT GOOD INTENDED

USE OF TABLE 6

The percent good table is designed to assist the appraiser in determining total loss of value once reproduction cost new (RCN) has been determined for the captioned equipment.

The table, derived from used equipment sales data, identifies a pattern of depreciation for two groups of equipment. Within each group three columns of percent good figures "new", "used", and average are listed. The column labeled "new" should be used to measure depreciation if the subject property was acquired new; conversely, the column labeled "used" should be applied when the equipment was purchased used. In cases where the taxpayer does not indicate if the property was first acquired new or first acquired used, table 6 provides an average of the new and used factors. The "new" and "used" factors may not be averaged unless the taxpayer does not indicate if the property was first acquired new or first acquired used.[11]

*Starting with the 2005 lien date, average factors were provided to reflect the provisions of section 401.16 as to use of average percent good factors.

TABLE 7: COMPUTER VALUATION FACTORS

Year Acquired	Age	PERSONAL COMPUTERS ($25,000 or less)	MID-RANGE COMPUTERS ($25,000.01 to $500,000)	MAINFRAME COMPUTERS ($500,000.01 or more)
2004	1	66	73	79
2003	2	39	47	54
2002	3	24	30	35
2001	4	15	19	22
2000	5	10	12	14
1999	6	6	8	9
1998	7	4	5	6
1997	8	2	3	4
1996	9	2	2	2

USE OF TABLE 7

Computer valuation tables were originally developed by the Board in 1995, and amended in 1997, by analyzing resale values of personal, mid-range, and mainframe computers as compared to original costs.[12] These factors are intended to be applied directly to historical costs of non-production computers. Non-production computers are computers, including related equipment, designed for general business purposes. Non-production computers do not include computers embedded in machinery and do not include equipment or computers specifically designed for use in any other application directly related to manufacturing. No estimates of economic lives are stated or implied, since the tables were not derived by analyzing price indexes and economic life patterns.

[11] Section 401.16.

[12] Prior to January 2000, computer valuation tables were distributed via Letter To Assessors. For more information regarding the original study and development of these factors, please refer to LTA's 97/18, 96/27, and 96/19.

TABLE 8: SEMICONDUCTOR MANUFACTURING EQUIPMENT VALUATION FACTORS

Year Acquired	Age	SEMICONDUCTOR MANUFACTURING EQUIPMENT
2004	1	80
2003	2	62
2002	3	47
2001	4	34
2000	5	24
1999	6	16
1998	7	10

USE OF TABLE 8

The semiconductor manufacturing equipment valuation table was initially approved by the Board in 1994.[13] The Board recommends the above table for use when valuing semiconductor manufacturing equipment. The table is based on a 6.5 year economic life. These factors are intended to be applied directly to historical costs.

[13] For more information regarding the original study and development of these factors, please refer to LTA's 90/36 and 94/24.

TABLE 9: INTERIM VALUATION FACTORS FOR BIOPHARMACEUTICAL INDUSTRY EQUIPMENT & FIXTURES

Year Acquired	Age	SCHEDULE A			SCHEDULE B
		Machinery & Equipment (A-1)	Other Equip. (A-3)	Tools, Molds, Dies, Jigs (A-4)	Fixtures (B-2)
2004	1	85	92	89	92
2003	2	69	83	78	83
2002	3	54	75	67	75
2001	4	40	66	56	66
2000	5	28	57	45	57
1999	6	18	49	35	49
1998	7	11	40	26	40
1997	8	10	33	19	33
1996	9	10	26	13	26
1995	10	10	20	10	20
1994	11	10	15	10	15
1993	12	10	11	10	11
Prior	Prior Years	10	10	10	10

USE OF TABLE 9

The interim valuation factor table pertaining to the assessment of specific property owned and/or used by the biopharmaceutical industry was adopted by the Board in 1999, and became effective as of the lien date January 1, 1999. For mass appraisal purposes, these factors are intended to be applied directly to the historical costs of property for each category. As illustrated, a minimum percent good factor of ten percent applies.

Following is a sample listing of the equipment and fixtures included in these schedules and categories. Other types of equipment (office equipment, computers, etc.) should be valued using the index factors and percent good factors or the valuation factors presented in the remainder of the handbook as appropriate.

SCHEDULE A

Machinery and Equipment

(Schedule A-1)

General Laboratory Equipment	Hi-tech Analytical Instruments
Analytical Balances	Cell Fusion Devices
Anesthetic Machines	Cell Sorting Instruments – FACS
Animal Cages	Chemstations – computer controlled
Autoclaves	Cryostats
Autosamplers	Chromatography – Desktop
Bacteria Identification Systems	Cytometry Instruments
Cameras used in research	DNA Sequencers and Analyzers
Centrifuges (and rotors)	DNA Synthesizers and Purifiers
Chart Recorders	Electrolyte Analyzers
Conductivity Monitors	Electron Scanning Microscopes
Control Valves (laboratory scale)	Electrophoresis – Gas or Liquid
Densitometers	Mass Spectrometers – NMR, FTIR, AA, MALDI
Digital Counters	Molecular Imaging Equipment
Evaporator	Particle Counters and Analyzers
Fermentors (< 100 liters)	Peptide Synthesizers and Sequencers
Fume Hoods (portable)	Protein Synthesizers
Glass Handling Equipment	Scintillation Counters
Glassware Washers	Spectrometers
Glucose Analyzers	Spectrophotometers
Ice Machines	Thermal Analysis Instruments
Imaging Equipment	Viscometers
Incubators	X-Ray Diffratometers
Liquid Samplers	Other unspecified equipment that is similar in character, scale and technology
Micromanipulators	
Microscopes	
Microtomes	
Optical Scanning Detectors	
Organic Synthesizers	
Osmometers	
Ovens	
pH Analyzers	
Pipettes	
Pumps (laboratory scale)	
Radiation Monitors	
Reactor Vessels (<100 liters)	
Refrigerators and Freezers	
Sample Handling Equipment	
Samplers	
Shakers	
Sterilizers	
Stirrers	
Ultrasonic Cleaning Systems	
Waterbaths	

Other Equipment

(Schedule A-3)

Air Sampler	Commercial Scale Stainless Steel Tanks and Vessels
Clean Room Monitor	Custom Roller Bottle Apparatus
Commercial Scale Agitator	Equipment Skids
Commercial Scale Control Devices	Filter Housings, Stainless Steel
Commercial Scale Fermentation Tanks and Controls	Floor Scale
Commercial Scale Glycol System	Flow Meter
Commercial Scale Mix Tanks, Stainless Steel	Piping and tubing between Production Vessels
Commercial Scale Mixers	Roller Bottle Machine Capper
Commercial Scale Pumps	Roller Bottle Machine Unit
Commercial Scale Purification Vessels and Devices	Roller Racks
Commercial Scale RO Water Unit and System	Sanitary Valves (personal property)
	WFI Water Still
	Other Commercial Scale Control Devices
	Other Commercial Scale Tanks, Vessels and Devices

Tools, Molds, Dies, Jigs

(Schedule A-4)

Mobile Pilot Plants	Skids
Pilot Scale Fermentation Control	Small Fermentors (< 500 liters)
Pilot Scale Mixers	Small Scale Process Control Devices
Pilot Scale Pumps and Hose Apparatus	Individual components aggregated into pilot scale manufacturing equipment systems
Pilot Scale Purification Vessels and Devices	

SCHEDULE B

Fixtures

(Schedule B-2)

Benches and Counters, Built-in	HVAC systems and ductwork unique to process
Cabinets, Built-in	Individual components aggregated into fixtures
Casework, Metal	Piping and plumbing related to process
Casework, Wood	RO, DI, WFI Water Piping
Clean In Place Equipment	Safety Stations and First Aid Cabinets
Clean Room Air Ducts/Handlers	Clean Room Special Wall Surfaces
Clean Room Filter Units	Steam supply unique to process
Clean Room Fixtures, not specified	Walk-in freezers and refrigerator units
Clean Room Special Floor Surfaces	Wall Cases, Built-in
Cleanrooms	Waste disposal equipment unique to process
Electric supply systems unique to process	Water supply systems unique to process (WFI)
Emergency Generators (for process)	Water, electric, and gas hook-ups to lab stations
Feedwater System	Other items meeting the definition of a fixture as specified in Property Tax Rule 122.5
Fiber optic communication systems for process	
Fume Hoods (built-in)	

CHAPTER 5: CLASS INFORMATION

COMMERCIAL CLASSES CONTAINED IN AVERAGE INDEX (TABLE 1)

- Bank
- Garage
- Hospital
- Hotel
- Laundry
- Library
- Office
- Restaurant
- Retail
- Theater
- Warehouse

INDUSTRY CLASSES CONTAINED IN AVERAGE INDEX (TABLE 2)

- Aerospace
- Cement Manufacturing
- Chemicals and Allied Products
- Electrical Equipment Manufacturing
- Electronic Equipment
- Fabricated Metal Products
- Food and Kindred Products
- Glass and Glass Products
- Grain and Grain Mill Products
- Leather and Leather Products
- Lumber, Wood Products, and Furniture
- Machinery, Except Electrical Metal Working and Transportation
- Mining
- Motor Vehicles and Parts
- Paper Finishing
- Petroleum Exploration and Production
- Petroleum Refining
- Plastics Products
- Primary Metals
- Printing and Publishing
- Professional and Scientific Instruments
- Pulp and Paper
- Rubber Products
- Stone and Clay Products Except Cement
- Sugar and Sugar Products
- Textile Mill Products
- Vegetable Oil Products

DESCRIPTION OF INDUSTRY CLASSES

Aerospace

Includes the manufacture of aircraft, spacecraft, rockets, missiles, and component parts.

Cement Manufacturing

Includes the manufacture of cement. Excludes the manufacture of concrete and concrete products.

Chemicals and Allied Products

Includes the manufacture of basic chemicals such as acids, alkalis, salts, organic and inorganic chemicals; chemical products to be used in further manufacture, such as synthetic fibers and plastics materials; and finished chemical products, such as pharmaceuticals, cosmetics, soaps, fertilizers, paints, varnishes, explosives, and compressed and liquefied gases.

Electrical Equipment Manufacturing

Includes the manufacture of electric household appliances, electronic equipment, batteries, ignition systems, and machinery used in the generation and utilization of electrical energy.

Electronic Equipment

Includes the manufacture of electronic communications, detection, guidance, control, radiation, computation, test, and navigation equipment, and components thereof. Excludes manufacturers that, in addition to electronic equipment, also produce other equipment included under electrical equipment.

Fabricated Metal Products

Includes the manufacture of fabricated metal products, such as cans, tinware, hardware, metal structural products, stampings, and a variety of metal and wire products.

Food and Kindred Products

Includes the manufacture of foods and beverages, such as meat and dairy products; baked goods; canned, frozen, and preserved products; confectionery and related products; and soft drinks and alcoholic beverages. Excludes the manufacture of grain and grain mill products, sugar and sugar products, and vegetable oils and vegetable oil products.

Glass and Glass Products

Includes the manufacture of flat, blown, or pressed glass products, such as plate, safety, and window glass, glass containers, glassware, and fiberglass. Excludes the manufacture of lenses.

Grain and Grain Mill Products

Includes the manufacture of blended and prepared flours, cereals, feeds, and other grain and grain mill products.

Leather and Leather Products

Includes the manufacture of finished leather products, the tanning, currying, and finishing of hides and skins, and the processing of fur pelts.

Lumber, Wood Products, and Furniture

Includes the manufacture of lumber, plywood, veneers, furniture, flooring, and other wood products. Excludes the manufacture of pulp and paper.

Machinery, Except Electrical, Metal Working, and Transportation

Includes the manufacture of machinery, such as engines and turbines, farm machinery, construction and mining machinery, food products machinery, textile machinery, woodworking machinery, paper industry machinery, compressors, pumps, ball and roller bearings, blowers, industrial patterns, process furnaces and ovens, office machines, and service industry machines and equipment.

Mining

Includes the mining and quarrying of metallic and nonmetallic minerals and the milling, benefaction, and other primary preparation of such materials.

Motor Vehicles and Parts

Includes the manufacture of automobiles, trucks, buses, and their component parts. Excludes the manufacture of glass, tires, and stampings.

Paper Finishing

Includes paper finishing and conversion into cartons, bags, envelopes, and similar products.

Petroleum Exploration and Production

Includes the exploration, drilling, maintenance, and production activities of petroleum and natural gas producers. Includes gathering pipelines and related storage facilities of such producers. Excludes gathering pipelines and related storage facilities of pipeline companies.

Petroleum Refining

Includes the distillation, fractionation, and catalytic cracking of crude petroleum into gasoline and its other components.

Plastics Products

Includes the manufacture of processed, fabricated, and finished plastic products. Excludes the manufacture of basic plastic materials.

Primary Metals

Includes the smelting, reducing, refining, and alloying of ferrous and nonferrous metals from ore, pig, or scrap, and the manufacture of castings, forgings, and other basic ferrous and nonferrous metals products.

Professional and Scientific Instruments

Includes the manufacture of mechanical measuring, engineering, laboratory, and scientific research instruments; optical instruments and lenses; surgical, medical, and dental instruments and equipment; ophthalmic equipment; photographic equipment; and watches and clocks.

Printing and Publishing

Includes printing, publishing, lithographing, and printing services, such as bookbinding, typesetting, photoengraving, and electrotyping.

Pulp and Paper

Includes the manufacture of pulp from wood, rags, and other fibers and the manufacture of paper and paperboard from pulp. Excludes paper finishing.

Rubber Products

Includes the manufacture of finished rubber products, and the recapping, retreading, and rebuilding of tires.

Stone and Clay Products, Except Cement

Includes the manufacture of structural clay products, such as brick, tile, and pipe; pottery and related products, such as vitreous-china, plumbing fixtures, earthenware, and ceramic insulating material; concrete; asphalt building materials; concrete, gypsum, and plaster products; cut and finished stone; and abrasive, asbestos, and miscellaneous nonmetallic mineral products.

Sugar and Sugar Products

Includes the manufacture of raw sugar, syrup, or finished sugar from sugar cane or sugar beets.

Textile Mill Products

Includes the manufacture of spun, woven, or processed yarns and fabrics from natural or synthetic fibers. Excludes finishing and dyeing.

Vegetable Oil Products

Includes the manufacture of vegetable oils and vegetable oil products.

CHAPTER 6: CLASSIFICATION OF IMPROVEMENTS AS STRUCTURE ITEMS OR FIXTURES

The intent of the following listing is to classify property without regard to ownership. The listing does not necessarily indicate appraisal responsibility by a real property appraiser or an auditor–appraiser. It should be used as a guide for classifying improvements reported on Schedule B of the Business Property Statement.

Section 122.5 of Title 18 of the California Code of Regulations (Property Tax Rule 122.5) provides a definition of "fixtures" and is controlling. For ease of use the general concepts used as a basis for the segregation of improvements to "structure item" or "fixtures" categories are as follows.[14]

Primary Test:

Rule 122.5(d) states that "...Intent is the primary test of classification." To determine intent the appraiser should look to what is "reasonably manifested by outward appearance."

Structure Item:

An improvement will be classified as a "structure item" when its primary use or purpose is for housing or accommodation of personnel, personalty, or fixtures; or when the improvement has no direct application to the process or function of the trade, industry, or profession.

Fixture:

An improvement will be classified as a "fixture" if its use or purpose directly applies to or augments the process or function of a trade, industry, or profession.

Dual Purpose:

Items that have a dual purpose will be classified according to their primary purpose.

Examples:

The following pages list a variety of improvements and their typical classifications as structure items or fixtures. It must be emphasized that the listing is illustrative as a guide only. Proper classification as a fixture or structure item is determined according to the actual use or purpose of the property.

[14] See also Assessors' Handbook Section 504 (AH 504), *Assessment of Personal Property and Fixtures*, for additional information.

STRUCTURE ITEMS

Air conditioning—office and building cooling

Auxiliary power generation equipment—for building purposes

Awnings

Batch plants—buildings, fences, paving, yard lights, and spur tracks

Boilers—office and building heating

Building renovations

Butane and propane installations—used for heating buildings

Car washes—all buildings, canopies, interior and exterior walls, fences, paving, and normal plumbing

Carpets and floor coverings affixed to floor—wall-to-wall carpeting and specially installed strip or area carpeting, tile, terrazzo coverings

Central heating and cooling plants

Chutes—built-in

Coin-operated laundries—restroom, sanitary plumbing fixtures

Conveyors—for moving people

Cooling towers—other than used in a trade or production process

Crane ways

Dock elevators

Elevators—including machinery and power wiring

FIXTURES

Air conditioning—process cooling

Air lines

Auxiliary power generation equipment—for trade or production purposes

Back bars

Batch plant—scales, silos, hoppers, bins, machinery

Boilers—for manufacturing process

Bowling lanes

Burglar alarm systems

Butane and propane installations—used for trade or production purposes

Car washes—special plumbing, wiring, and car washing equipment

Compressors—air

Conveyors—for moving materials and products

Cooling towers—used in a trade or production process

Counters

Cranes—traveling

Environmental control devices—used in the production process

Fans and ducts—used for processing

STRUCTURE ITEMS

Environmental control devices—if an integral part of the structure

Escalators

External window coverings

Fans and ducts—which are part of an air circulation or exhaust system for the building

Fences—outside of building

Flagpoles

Heating—boilers—used in office or building heating

Kiosk—permanently attached

Movie sets—which are a complete building

Paint spray rooms—if an integral part of the building

Parking lot gates

Partitions—floor to ceiling

Pipelines and pipe supports—used to convey air, water, steam, oil, or gas to operate the facilities in a building

Pits—not used in the trade or process

Pneumatic tube systems

Radiators—steam

Railroad spurs

Refrigeration systems—that are an integral part of the building

FIXTURES

Fences and railings—inside of buildings

Furnaces—process

Furnishings—built-in, i.e., wall-hung desks

Heating—boilers—for the manufacturing process

Hoists

Incinerators—commercial and industrial

Ice dispensers—coin operated

Kilns—beehive, tunnel, or cylinder type, and equipment

Kilns—lumber

Laundromat—plumbing, wiring, and concrete work for equipment

Lighting fixtures—lighting associated with a commercial or industrial process

Machinery foundations and pits—not part of normal flooring or foundation

Miniature golf courses

Movie sets—which are not a complete building

Ovens

Paint spray booths

Partitions—annexed—less than floor to ceiling

Pipelines and pipe supports—used to convey air, water, steam, oil, or gas to equipment used in the production process

STRUCTURE ITEMS

Refrigerators—walk in—which are an integral part of the building—excluding operating equipment

Restaurants—rough plumbing to fixtures

Renovations to building structures

Security—Banks and Financial
- Fire alarm systems
- Safes-embedded
- Night depository –(if an integral part of the building)
- Teller cages
- Vault alarm system
- Vaults

Service stations—canopies, paving, sign, pylons

Shelving—originally designed as an integral part of the building

Shielded or clean rooms—if an integral part of the building

Signs—include supporting structure, which forms an integral part of the building, including sign blades, pylons, or marquee structures serving as canopies. Exclude sign cabinet (face) and lettering

Silos or tanks—whose primary function or intent is to store property for a time period, such as storage tank farms and grain and liquid petroleum storage facilities

Smog control devices—when attached to incinerator or building heating plant

FIXTURES

Pits—used as wine and sugar clarifiers, skimming pits, grease pits, sump pits, and pits used to house machinery in the manufacturing

Plumbing—special purpose

Power wiring, switch gear, and power panels—for manufacturing process

Refrigeration systems—that are not an integral part of the building

Refrigerators—walk in—unitized—including operating equipment

Restaurant equipment—plumbing fixtures, stainless steel or galvanized sinks in kitchens, bars, soda fountains, garbage disposals, dishwashers, hoods, etc.

Roller skating surface

Scales—including platform and pit

Security—Banks and Financial
- Cameras (surveillance)—attached to walls or columns
- Drive-up and walk-up windows—unitized security type
- Night depository –(if not an integral part of the building)
- Man traps
- Vault doors

Service Stations—gasoline storage tanks, pumps, air and water wells

STRUCTURE ITEMS

Sprinkler systems—where primary function is the protection of a building or structure

Store fronts

Television and radio antenna towers

Trout ponds—concrete

Theaters—drive-in—buildings, screen and structures, fencing, paving, lighting

Water systems at golf courses

FIXTURES

Shelving—other than that which is an integral part of the building

Shielded or clean rooms—if not an integral part of the building

Signs—sign cabinets and free standing signs, including supports

Silos or tanks—whose primary function is as part of a process, including temporary process holding such as breweries or refineries

Ski lifts, tows, trams

Sky slides

Smog control devices—attached to process device

Theaters—auditorium equipment—seating, screens, stage equipment, sound, lighting, and projection

Theaters—drive in—heater and speaker uprights, wiring and units, projection equipment, signs

Trash compactors and paper shredders

Wash basins—special purpose water softeners for commercial or industrial purposes

CHAPTER 7: VALUATION GUIDES

There are numerous valuation guides available that contain sale-derived market values of construction mobile equipment and agricultural mobile equipment. The appraiser should utilize these valuation guides in making the appraisal estimate when sufficient information regarding the equipment's make, model, etc., is available. The index factors from Table 3 and the percent good factors from Table 5 and Table 6 should be used when sufficient information cannot be obtained from value guides or other market information.

Valuation guides that we are aware of include the following:

Agricultural Equipment

The Official Tractor Blue Book, Primedia Business Magazine and Media

Phone: (800) 262-1954 or (913) 967-1719

Internet Address: www.primediabusiness.com

Official Guide - Tractors and Farm Equipment , Iron Solutions

Phone: (877) 266-4766

Internet Address: www.ironsolutions.com

Farm Equipment Guide, Heartland Ag Business Group

Phone: (800) 673-4763

Internet Address: www.farmequipmentguide.com

Construction Equipment

Green Guide: Equipment Values, Primedia Business Magazines & Media

Phone: (877) 873-6633

Internet Address: www.equipmentwatch.com